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AGRICULTURE

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IN

AUSTRALIA

**With Emphasis on Trade with
Far East Countries**



ERS-FOREIGN 255

U. S. DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE
FOREIGN REGIONAL ANALYSIS DIVISION

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This report updates in part FAER No. 3, Australia's
Production and Trade Policies Affecting U.S. Farm
Exports, published in December 1961 but now out of
print.

All photos courtesy of the Australian News and
Information Bureau.



SUMMARY

Australia's long-term agricultural policy is stimulating growth in all areas of farm production. Incentives to produce more range from fertilizer subsidies and tax concessions to research and development projects for plant breeding and livestock improvement. Large areas have been cleared and put into production, and great irrigation systems are being built. There is widespread and increasing use of labor-saving machinery in all sectors of rural industry.

Agricultural production in Australia has shown a steady expansion. Although the gross value of production in 1967/68, \$3.8 billion, was lower than the previous year, it is estimated that it will reach a record high in 1968/69. ^{1/} Output of beef and veal almost doubled since World War II, and while recent drought has depressed production, a recovery is seen for 1968/69. The dairy industry, long highly subsidized, is undergoing changes to effect more efficient operations which could lead to an increase in milk production, with no reduction in exportable surplus expected. Wheat, Australia's most important crop, has shown a steady overall increase in production; forecasts for 1968/69 crop are close to 14 million tons. Production of oats and barley, while adversely affected by poor weather in 1966/67, is expected to make a substantial recovery in 1968/69. Grain sorghum production has the potential for significant expansion in the future as new lands are being rapidly developed and brought into cultivation. Rice output has increased steadily for the past several years, reaching 220,000 tons of paddy in 1967/68; a record harvest is expected in 1968/69. Cotton production has increased dramatically over the past few years, and has become highly capital-intensive and fully mechanized. Further expansion is expected when the Ord River Project in Western Australia and the Emerald irrigation scheme in Queensland are completed. Fruits and dried vine fruits have all shown a steady rise in production, outside of seasonal variations. Australia is the world's third largest producer of dried vine fruit.

Australia's economy depends to a considerable degree on exports and over the years a large proportion of agricultural production has been shipped abroad. Exports of farm origin, which in 1967/68 were valued at over \$2 million, represent nearly 70 percent of the value of all exports. Both agricultural exports and production have shown an almost steady increase. Wool generally accounts for about one-third of the value of all exports. Australia's markets for wool have been changing in relative importance in the past 10 years, with Japan's share increasing, while that of the United Kingdom and EEC countries has decreased. Australia ranks second among the world's beef exporters. Wheat is the chief grain export, contributing almost one-fifth of

^{1/} U.S. dollars and metric tons are used throughout this report.

the value of exports of rural origin in 1966/67. Oats and barley are next important grain exports, although sorghum is expected to become significant in the near future.

Looking forward, further increases are expected for exports of beef and veal, tallow, cattle hides, eggs, feed grains, and canned fruit. Australia's ability to produce increasing quantities of wheat and wool for export is also substantial, but actual export increases will depend on the world market, and for wheat, on strong competition from other exporting countries. Moderate export gains are expected for dried fruits, mutton, and lamb. Decreases are expected for butter exports, but exports of other dairy products are expected to rise.

In Australia there is growing emphasis on trade with the Asian countries, with both the Commonwealth Government and private interests actively engaged in trade promotion activities in the Far East. Over the last few years, there has been a substantial increase in the proportion of exports moving to these countries. In 1966/67, Japan surpassed the United Kingdom for the first time as Australia's major export market.

AGRICULTURE IN AUSTRALIA WITH EMPHASIS ON TRADE WITH FAR EAST COUNTRIES

by

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PHYSICAL CHARACTERISTICS

The Land

Australia is located in the southern hemisphere between the Pacific Ocean on the east and the Indian Ocean on the west, and covers nearly 3 million square miles--approximately the same area as the continental United States. The relief of the land is low or moderately high with an average elevation for the whole continent of less than 1,000 feet. Two-thirds of the land mass is covered by an extensive plateau that is practically a desert. Only along the coasts is there a well-developed system of rivers draining into the sea. In many of the drier parts and in the monsoonal region of the north, rivers often disappear during the dry season.

The Climate

Australia's climate is tempered by the surrounding oceans and the absence of high or extensive mountains, and in general lacks the severe extremes of temperature of other large land masses. Rainfall is scanty, with almost 40 percent of the land receiving less than 10 inches a year, and 70 percent less than 20 inches. Three-quarters of the continent has an evaporation rate that exceeds the rainfall.

The most reliable rainfall occurs in the southwest of Western Australia, the southeast of South Australia, western Tasmania, and western and southern Victoria south of the divide. Most of New South Wales has an even distribution of rain throughout the year. However, in the southern part of New South Wales and in most of Victoria, rain is erratic during the summer and drought is common.

Nearly 39 percent of Australia lies in the tropical regions north of the Tropic of Capricorn, where the northwest monsoon brings rain during the summer months. Along the eastern coastal regions the prevailing southeast winds bring rain throughout the year, with the precipitation diminishing as the winds move inland. South of the Tropic and inland from the east coast, the climate is

dry. Southwestern and southeastern Australia and Tasmania, under the influence of the westerlies, have a high winter rainfall, especially on the windward side of the mountains.

AGRICULTURAL POLICY

Australia has an active policy to promote the expansion and efficiency of agricultural production for both domestic and export markets. Since agricultural exports provide around two-thirds of all foreign exchange earnings, major emphasis is on products readily marketable abroad, such as wool, meats, wheat, sugar, certain fruits, and dairy products.

The various States are constitutionally responsible for land settlement and agricultural production. An Australian Agricultural Council coordinates agricultural policies enacted by the State and Commonwealth Governments. Programs exist for land settlement and development, agricultural research, and extension services. The Council, composed of the Commonwealth Minister of Primary Industry and the State Ministers of Agriculture, approves subsidies, price stabilization, and other organized marketing programs subject to Government legislation.

Agricultural Resources Development

Australia has made great advances in land development since World War II. Existing land use has been intensified and vast new areas have been developed for pastures and crops through new techniques of land clearing.

The largest land development project since World War II has been the Commonwealth War Service Land Settlement Scheme, which provided for settlement of eligible ex-servicemen. The almost 14 million acres involved in this project (new land brought into production has probably exceeded 3 million acres) are located in Queensland, New South Wales, Western Australia, South Australia, and Victoria. War-service land settlement was completed in most States by 1966, but the Scheme is still in limited operation, mainly as a credit facility for rural development.

Since extensive, large-scale production makes the greatest contribution to Australia's overall economy by providing commodities for international trade, it is likely that this sector of agriculture will receive the greatest emphasis in the future. During the fifties, some 800,000 acres in the Ninety Mile Plain of South Australia were developed for livestock production. About 3 million acres in the Esperance Region of Western Australia have been cleared and are being used for Merino sheep, cattle, and small grain production. In the northern part of Western Australia, nearly a million acres a year are being brought into agricultural use through land clearance and irrigation projects.

Since 1961, almost \$34 million has been given by the Commonwealth Government to the Queensland and Western Australian Governments for construction of "beef" roads to link the grazing areas with the meatpacking

centers, and in 1968 a new \$56-million program was initiated for the expansion of these roads.

In Queensland, 15 million acres that were covered with Brigalow (a leguminous tree that leaves nitrogen-rich soil) are being cleared for beef and grain production (figs. 1 and 2). Development is about one-third complete, and by 1977 about 11 million acres are scheduled to be in use. This area is more fertile than the new lands in Western Australia and lies in a higher rainfall belt.

Commonwealth, State, and local governments and private individuals and companies are all involved in the development of northern Australia. New railways, roads, ports, and processing plants are being built. There are plans to build a deep water port on the west side of the Kimberleys to facilitate overseas shipments, particularly to the Far East. Cotton, grain sorghum, sugar, and oilseeds have already proved cultivable in the Ord River section of the Kimberleys. Legumes and grasses suited to the tropical and subtropical conditions of the northern regions are being developed. In the Northern Territory, changes have been enacted in the Land Tenure Regulations that give greater security to lease holders and more flexibility of land use. These revisions have provided an incentive for further increases in capital investment in land development as well as in the beef industry.

In Australia, all irrigation resources not wholly within individual properties are nationalized, and about 90 percent of the irrigated area is under control of the States. However, in view of the national importance of water conservation in reducing hazards of drought and promoting production, a joint Commonwealth-State irrigation development program is being planned.

In 1966/67, there were about 3.4 million acres of irrigated land in the whole country, which represents a doubling of irrigated area over the past 10 years. ^{2/} Almost 80 percent of the irrigated land is located in the Murray-Darling River basin of New South Wales and Victoria. The economies of these southeastern areas have been built on irrigation and water is used extensively for pastures, orchards, vineyards, fodder and grain crops, and livestock. Nearly 10 percent of the irrigated land is in Queensland, where it is utilized primarily for sugarcane.

The Snowy Mountains Scheme, a major engineering project to control and use the considerable supply of water in the Australian Alps, is now nearing completion. It involves an extensive system of dams, tunnels, river diversions, and aqueducts to divert eastward-flowing water westward into the Murrumbidgee and Murray Rivers (fig. 3). This project will have cost \$896 million by 1974 and should increase the value of agricultural production by

^{2/} Period covered: In the case of crops the data relating to acreage, volume of production, and gross value of production are, in general, for the season ending March 31, i.e., they include crops which are sown and harvested, or harvested, during the 12 months ending March. Data relating to the volume and the value of production of livestock products refer to the year ending June 30. Volume of exports and value of exports refer to commodities actually exported during the trade year July 1 to June 30.



Figure 1.--Brigalow scrub in Queensland.



Figure 2.--Brigalow scrublands "crashed" by two bulldozers with chain and subsequently burned preparatory to aerial sowing of pasture.



Figure 3.--Lake Eucumbene, Snowy Mountains Scheme, New South Wales.

\$67.2 million a year. The main development runs seven power stations providing electricity to New South Wales and Victoria. It is expected that the power supplied will cover the costs of the project.

In 1967, the Government announced plans for two other large irrigation projects. Western Australia was allocated \$53.8 million to begin construction of the main dam in the Ord River project. The entire scheme will cost about \$134.4 million and will provide sufficient water to irrigate an additional 175,000 acres for cotton, sorghum, and coarse grain production. Queensland was allotted \$22.4 million to finance the Emerald irrigation scheme on the Nogoa River. The project, which will provide additional acreage for cotton and grain sorghum production, encompasses an area of 50,000 acres and is expected to cost about \$30.2 million when completed.

Since Australian rivers have both annual and seasonal variability of flow, it has been necessary to construct large storage reservoirs to conserve water for dry periods. The main reservoirs are on the streams of the Murray River and its tributaries, the largest river system in Australia. In the past 10 years Australia has more than doubled the capacity of its large water storages. In addition to conserving water for irrigation, many storages are used for flood control and hydroelectricity. Early in 1968, New South Wales announced plans for the expenditure of \$22.4 million for the construction of three major storage and irrigation facilities to conserve water from the Snowy Mountain project. Matching funds are being supplied by the Federal Government.

Government Aid to Agriculture

The Australian Government has attempted by such means as tax allowances and subsidies, measures affecting interest rates and availability of credit, and price stabilization programs to stimulate investment in agriculture and to ease difficulties arising from fluctuating farm incomes.

Various tax concessions are allowed to agricultural producers. Plant equipment and structures may be depreciated at 20 percent annually over a 5-year period, and a 20-percent investment allowance may be deducted for new plant and equipment, other than road vehicles, in the year purchased. Thus, over a 5-year period it is possible to write off 120 percent of the cost of some items. Expenditures for soil reclamation, water conservation, and fencing to control animal pests are fully deductible, and certain concessions are allowed for losses incurred from fire, drought, or floods. In addition, since 1966/67, a primary producer whose average income has not exceeded \$16,000 over the previous 5 years may calculate tax liability by using his 5-year average income. This is of particular advantage when incomes are rising.

In 1963, the Government introduced a superphosphate subsidy scheme which has been extended through October 31, 1971. The subsidy includes payments of \$3.80 a ton for standard superphosphate and \$44 a ton for trace elements blended with superphosphates. A nitrogenous fertilizer subsidy, amounting to \$38 per ton of plant nutrient, was introduced in August 1966 and will continue in effect until November 1969. Although this subsidy will be of particular benefit to the sugarcane industry, it will also help cotton growers and, where rainfall is sufficient, should benefit wheat production and pastures as well.

The major trading banks (including the Commonwealth Trading Bank) are the largest single source of institutional credit. But in the wool and livestock industries, short-term credit is obtained primarily from pastoral companies. These companies handle wool storage and run wool and livestock auctions, in addition to providing short-term loans, generally as advances on sales. Recently they have been actively expanding their activities, particularly in the sheep industry.

To insure loans at moderate rates, the Government in 1960 provided initial capital and established the Commonwealth Development Bank. Unlike the trading banks, this institution bases its lending policy on the expected profitability of the investment, rather than on security of the loan.

In 1962, the Government established revolving term-loan funds to provide medium-term credit (up to 7 years). Four years later, the Farm Development Loan Fund was instituted to furnish loans of longer duration. Loans from the Farm Development Loan Fund are repayable over a fixed period, usually up to 15 years. The initial resources of the Fund in 1966 were \$56 million, and in 1968, \$41.4 million was added to the fund. Both the term-lending fund and the farm-development loan fund are financed and handled by the trading banks. These banks are requested by the Reserve Bank of Australia to keep their average rate of interest to primary producers lower than that to general borrowers.

The main objective of price support and equalization programs is to minimize fluctuations of income for primary producers. Price equalization is

generally achieved by pooling. When export prices exceed the guaranteed price, a levy is paid into a stabilization fund which is used to augment export prices when they fall below the guaranteed price. Any deficiency in the fund is subsidized by the Government. In this way domestic prices for agricultural products are maintained at a prescribed level while products exported can be priced competitively for world trade.

The Commonwealth Government has found it difficult to devise effective equalization programs for whole industries, since the individual States have control over the marketing and pricing of some commodities. Most schemes are subject to some form of Government regulation; only one, wheat, has all marketing (domestic and export) controlled by the Commonwealth Government through the operations of the Australian Wheat Board.

The labor-intensive industries, which would naturally be at a competitive disadvantage, receive the highest protection. The dairy industry, which has always been particularly important to the economy of Australia, is a typical example. Minimum prices are guaranteed to producers through Government subsidies. An export bounty is also set annually for processed milk products. In addition, butter is protected from competition by the establishment of production quotas on margarine.

Some of the price support programs have measures to insure full purchase of the domestic crop. The Government pays a bounty on raw cotton produced and sold for use in Australia, and allows duty-free imports only when all domestic cotton has been taken by the mills. There is a concessional tariff on imported tobacco provided that the manufacturers use a specified percentage of domestic leaf.

Various means are used to control supply--for example, acreage and water restrictions for rice and vine fruit; import limitations on wheat, cotton, rice, and tobacco; marketing quotas for sugar and tobacco; and variable subsidy rates based on end use of the product, such as those for milk, sugar, and eggs.

Other Government assistance to agricultural producers includes a system of subsidies to reduce transport costs for producers in distant areas and payments for cattle-tick control and flood, drought, and bush fire relief.

Closer settlement, long favored by the Commonwealth Government to develop rural industry and to encourage people to remain on the land, has sometimes created uneconomic operations. Following the depression of the thirties, the Government had to give assistance to reconstruct some of these holdings. In 1968, legislation was proposed to make \$28 million available over the following 4 years for reconstruction of the dairy industry. The objectives of the program are to enable the low-income farmer to leave dairying if he so desires, to amalgamate farms into viable operations, and to encourage diversification--away from butterfat production or into a different type of farming, such as beef cattle or forestry. The bulk of the money will be allocated to Queensland and New South Wales, less to Western Australia; smaller amounts will be allotted to the other States where the problem is not so acute. The scheme will affect between 3 and 6 percent of all dairy farms--those that ordinarily would go out of production or change hands each year. The problem is most acute in the milk-manufacturing sector of the industry, where a recent survey indicates that

about 7,000 (or 17 percent) of the farms are uneconomic and should be phased out.

Following the devaluation of the British pound, the Government announced plans to reimburse the Australian Wheat Board for losses incurred on outstanding sterling contracts. Other marketing authorities, such as the Australian Dairy Produce Board and the Australian Egg Board, which could not take out full coverage with the Reserve Bank against devaluation, are also eligible for assistance. The sum of \$38 million has been granted to the marketing boards for this purpose.

Research, Education, and Extension Services

Research is carried out by the Commonwealth Scientific Industrial Research Organization (CSIRO), the colleges, and by the State departments of agriculture. The CSIRO, which has many field stations in Australia and regional laboratories in several States, is concerned not only with nearly all technical aspects of rural production but also with research in product processing (wool, in particular). Economic research is under the Bureau of Agricultural Economics, which makes surveys of major rural industries to evaluate the Government's agricultural policies and the economic potentialities of the industries.

Research is financed mainly by funds from compulsory levies on industry supplemented by grants from the Government. Legislative research schemes jointly financed by the Government and industry and/or States exist for wheat, wool, tobacco, dairy produce, meat, eggs, honey, and wine. The State departments of agriculture maintain small experimental farms and research stations; these are primarily concerned with technical research in a particular locality. Recently there has been some development of large regional research centers, such as the agricultural research institute at Wagga Wagga, New South Wales.

All of the States except Tasmania have agricultural colleges. These are primarily teaching institutions, although some research is carried out and more emphasis is being given to graduate work. Agricultural education provided by the universities has been limited, and there is a need for expanded training facilities to eliminate a continuing shortage of agricultural researchers, teachers, and extension workers.

The State Governments have been primarily responsible for agricultural extension, but the universities also have limited extension services. Better extension programs are needed, and the Commonwealth Government in 1966 instituted a 5-year program, under which its annual contribution to extension services will be increased from about \$1.6 to \$4.5 million. New developments in agricultural extension have been the cooperative farm-management club, which contracts for the full-time services of an agricultural consultant, and the private agricultural consultant, who may be engaged as needed by individuals.

U.S. investment has contributed significantly to development of Australian rural industries. It was largely U.S. capital and know-how that stimulated

development of the New South Wales cotton industry. There has also been considerable U.S. investment in the cattle and sheep industries of Queensland, Northern Territory, and in the Esperance area of Western Australia. A joint Australian-U.S. industry project is underway to construct an advanced plant-breeding research station in New South Wales, which will concentrate on breeding programs for maize, sweet corn, popcorn, grain sorghum, and forage crops that need minimum water supplies.

AGRICULTURAL PRODUCTION

In recent years agricultural production in Australia has been expanding almost steadily despite the fact that the rural population has been declining both in numbers and as a proportion of total population. In August 1968, Australia had a population of 12 million, four-fifths of which live within a radius of 750 miles of Sydney. Only slightly over 10 percent of Australia's total labor force of 4.3 million is engaged in agriculture.

For 1967/68, the gross value of rural production was estimated at about \$3.8 billion, or 13 percent lower than the \$4.3 billion high of 1966/67. This decrease partially may be attributed to worsening drought conditions, as eastern Australia suffered from the second drought in 3 years. Output of wheat and other cereals, butter, and dried vine fruit fell significantly, while meat output rose slightly as drought forced increased slaughter. Some of the decline also resulted from the poor market prices for wool. However, the forecast for 1968/69 indicates a rise to \$4.4 billion in gross value of rural production.

Producer income has generally been maintained at a level comparable with nonfarm income by increasing output. There is often fluctuation in annual income, however, since a large part of the agricultural economy rests on wheat and wool. Wool prices change frequently and both industries are dependent on weather. As a result of a record wheat crop, farm income for 1966/67 was up 25 percent from the previous year, reaching \$1.5 billion, in spite of rising farm production costs. But in 1967/68, farm income was expected to drop about 35 percent to \$955 million, the lowest since 1957/58, with purchasing power at the lowest point since the drought years 1944/45 and 1945/46.

Land Use

Only 20 percent of Australia has sufficient moisture for a natural growing season (determined by soil moisture and its availability during the year) of at least 5 months, a span which is essential for most crops. Irrigation has made it possible to produce many crops in areas where the natural growing season would be too short. Over 80 percent of the land in agricultural use is occupied by grazing lands where livestock exist mainly on native vegetation. Growth of pasture in Australia is seldom limited by long periods of cold weather, and pastures may be considered one of Australia's most important crops.

The greater part of the tropical area of the north is used for cattle grazing, although along the northeastern Queensland coast there are areas of intensive sugar production, dairying, and some grain and fruit crops.

Land outside the tropics with a growing season of more than 5 months lies along the eastern, southeastern, and southwestern coasts of Australia. In the winter-rainfall regions of southern Australia, the land is widely used for cereal production. In New South Wales and Victoria, emphasis has been placed on irrigation for rice, pastures, and horticultural production. Where rainfall is excessive along the coast of southern Australia, the soils tend to be leached; but with drainage and the addition of fertilizer (particularly superphosphates), such land has been made productive.

Along the coasts of southeastern Queensland and northern New South Wales, where moisture is abundant, sugarcane is the main crop. Sown pastures are becoming more important, however, with the increasing use of phosphatic and nitrogenous fertilizers.

The arid and semiarid lands of Western Australia and inland New South Wales bordering the desert are used mainly for sheep production. In the southwest corner of Western Australia where the growing season is longer, wheat, sheep, and cattle farming are the chief agricultural activities, although there is some dairying along the coast. Almost a quarter of the wheat grown in the Commonwealth is now produced in Western Australia.

Much of the increase in production in the postwar era has been a result of intensification of existing land use. While large-scale dryland development projects have added almost 26 million acres, mainly for sheep, beef, and grain production, total area of rural holdings (1.2 billion acres in 1966/67) showed an increase of only 7 percent between 1955/56 and 1966/67. This compares with an increase of 74 percent in the area planted to crops and 80 percent in that sown to grasses and clovers (table 1). Pasture improvement has undoubtedly made the greatest contribution to the economy and a huge potential for future development still exists.

Technical Advances

Mechanization has been the means to large-scale agricultural development in Australia. Inventions leading to extensive wheat production were first introduced during the mid-19th century, and by 1900 technical advances had made it possible for all wheat cropping operations to be conducted on a large-scale basis. Tractors and tractor-drawn equipment were introduced following World War I, and after the second World War, farm mechanization spread throughout Australia. In 1966, there were over 300,000 tractors on rural holdings. Labor-saving machinery is now used extensively for clearing, cultivating, seeding and harvesting, for dairying, and for the development and maintenance of farms and livestock stations. Expanding use is being made of contract services for large-scale clearing, fencing, and private water projects.

Since World War II, there has been a rapid rise in the area of sown pastures, on which large quantities of chemical fertilizers have been used. Increasing areas of natural pastures also have been treated with fertilizers. Pastures account for over 60 percent of the area fertilized and over 60 percent of the total quantity of fertilizers applied. More extensive use is also being made of aircraft for top dressing, seeding, spraying, and dusting

Table 1.--Land utilization of rural holdings, Australia, 1955/56 and 1961/62-1966/67

Year	Area used for crops <u>1/</u>	Land lying fallow <u>2/</u>	Area under sown grasses and clovers <u>3/</u>	Balance of holdings <u>4/</u>	Total area of holdings
			-1,000 acres-		
1955/56.....	21,253	6,445	28,360	1,068,387	1,124,445
1961/62.....	27,907	8,049	39,063	1,094,216	1,169,235
1962/63.....	30,056	8,719	40,991	1,097,879	1,177,645
1963/64.....	29,948	8,510	44,211	1,101,837	1,184,506
1964/65.....	32,251	8,466	47,159	1,102,894	1,190,770
1965/66.....	32,798	10,741	48,519	1,109,703	1,201,492
1966/67.....	37,087	9,784	51,471	1,105,090	1,203,431

1/ Excludes (1) duplication on account of area double cropped, except for New South Wales and South Australia and (2) clovers and grasses cut for hay and seed which have been included in "Area under sown grasses and clovers."

2/ Excludes short or summer fallow.

3/ Includes paspalum.

4/ Used for grazing, lying idle, etc.

Source: Yearbook Australia, 1967, Commonwealth Bureau of Census and Statistics, Canberra.

of crops and pastures, and for pest and vermin extermination (fig. 4). In 1965/66, 63.7 million acres were artificially fertilized in Australia, representing a 74-percent increase over the area treated 10 years earlier (table 2). Total area treated from aircraft in 1965/66 was over 15 million acres (table 3).

Livestock Production

Sheep.--Australia is the world's major producer of wool, accounting for almost one-third of the total supply and more than one-half of the merino variety. Wool production contributed 21 percent of the total value of Australia's agricultural production in 1967/68 (table 4). Wool production has been steadily increasing through expanding acreage of improved pastures, wider use of ley farming (a pasture- and crop-rotation system which provides excellent pastures for sheep and nitrogen for subsequent grain crops), better management, improved pest and disease control, and selective breeding. In addition to an expansion in acreage, there has been an increase in number of large-scale holdings (particularly holdings of 1,000 to 5,000 acres) and in the number of sheep carried per holding. Postwar expansion has been concentrated in the more favorable rainfall areas. Since 1965/66 the rate of expansion in wool production has averaged about 2 percent a year, but future production will depend on wool prices to producers. World wool prices have been somewhat depressed in recent years by competition from synthetics, and

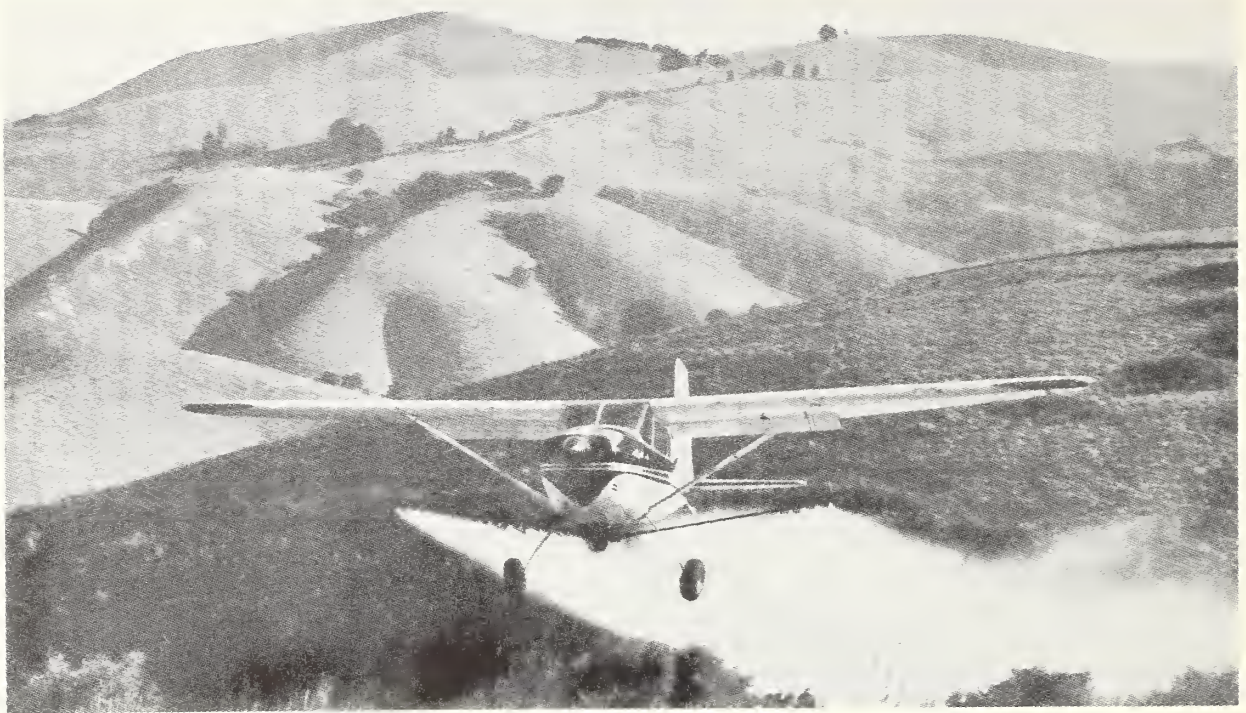


Figure 4.--Aerial spraying in pastoral country.

unless conditions improve it is doubtful whether wool production will continue to increase at the same rate.

At the end of March 1968, there were 165 million sheep and lambs in Australia, 1 million more than a year earlier, but 6 million fewer than the record level of March 1965. The Merino sheep, because it produces a fine quality of wool and is most adaptable to extremes of temperature and climate, accounts for three-fourths of total numbers.

Wool-growing areas may be divided into three zones based on climatic differences. In the pastoral zones where rainfall averages less than 15 inches a year (mostly south of the Tropic of Capricorn), the sheep, mainly Merinos, exist on native vegetation. About 30 percent of Australia's sheep are raised in this area. About 40 percent of the sheep population is produced in the wheat-sheep zone (mainly in Queensland and New South Wales), where ley-farming is prevalent and rainfall ranges from 15 to 25 inches a year (fig. 5). Climatic conditions are more favorable here, although this region was severely affected by the 1965 drought. The remaining 30 percent of the country's sheep are raised in the subcoastal, high-rainfall zone. Many of the soils in this region are leached and deficient in phosphorus, nitrogen, and some of the trace elements. Although this zone has had the highest rate of increase in sheep population, pastures could be improved and stocked more heavily. There are few sheep in the coastal and northern parts of Queensland, the Northern Territory, or the Kimberley area of Western Australia because of unsuitable climate, poor pastures, and dingoes (wild dogs).

Table 3.--Aerial agriculture, Australia, 1963-67

Year ending March 31	Area :topdressed: :and seeded:	Area : sprayed	Total : area : treated 1/	Materials used : Super- : phosphate :	Seed	Total : flying : time
	1,000	1,000	1,000		1,000	
	<u>acres</u>	<u>acres</u>	<u>acres</u>	<u>Tons</u>	<u>pounds</u>	<u>Hours</u>
1963.....	6,965	1,739	8,763	328,646	1,012	61,411
1964.....	10,666	2,041	12,788	505,811	1,997	84,827
1965.....	14,147	2,416	16,640	656,094	3,467	108,753
1966.....	11,314	3,469	15,010	588,045	1,581	108,850
1967.....	11,612	3,190	15,200	594,913	2,407	108,358

1/ Includes other types of treatment (rabbit baiting, etc.).

Source: Rural Land Use and Crop Production. Statis. Bul. No. 24, Season 1966/67, Commonwealth Bureau of Census and Statistics, Canberra.

Table 4.--Contribution to gross value of rural production, by selected commodities, Australia, average 1956/57-1958/59, annual 1964/65-1967/68

Commodity	: Average :	:	:	:	:
	: 1956/57- : 1964/65 :	: 1965/66 :	: 1966/67 :	: 1967/68 <u>1/</u>	
	: 1958/59 :	:	:	:	
			<u>Percent</u>		
Wool.....	32.2	24.4	24.1	21.2	21.2
Cattle and sheep slaughtered.....	16.8	19.0	22.0	18.7	21.4
Whole milk.....	12.7	11.1	11.4	10.2	11.4
Wheat.....	8.2	15.0	11.5	18.1	13.2
Sugarcane.....	3.6	3.8	3.6	3.2	4.0
All other.....	26.5	25.8	27.4	29.5	27.9
Total.....	100.0	100.0	100.0	100.0	100.0

1/ Estimated.

Sources: Commonwealth Bureau of Census and Statistics and Commonwealth Bureau of Agricultural Economics, Canberra.

Average annual production of greasy wool for 1956/57-1960/61 was about 716,000 tons, and for 1961/62-1965/66, about 780,000 tons (table 5). Production for 1967/68 at 802,000 tons showed a slight rise over the previous year in spite of recent drought. Estimates for 1968/69 indicate an increase of only about 4 percent because of continuing drought conditions in southeastern Australia.

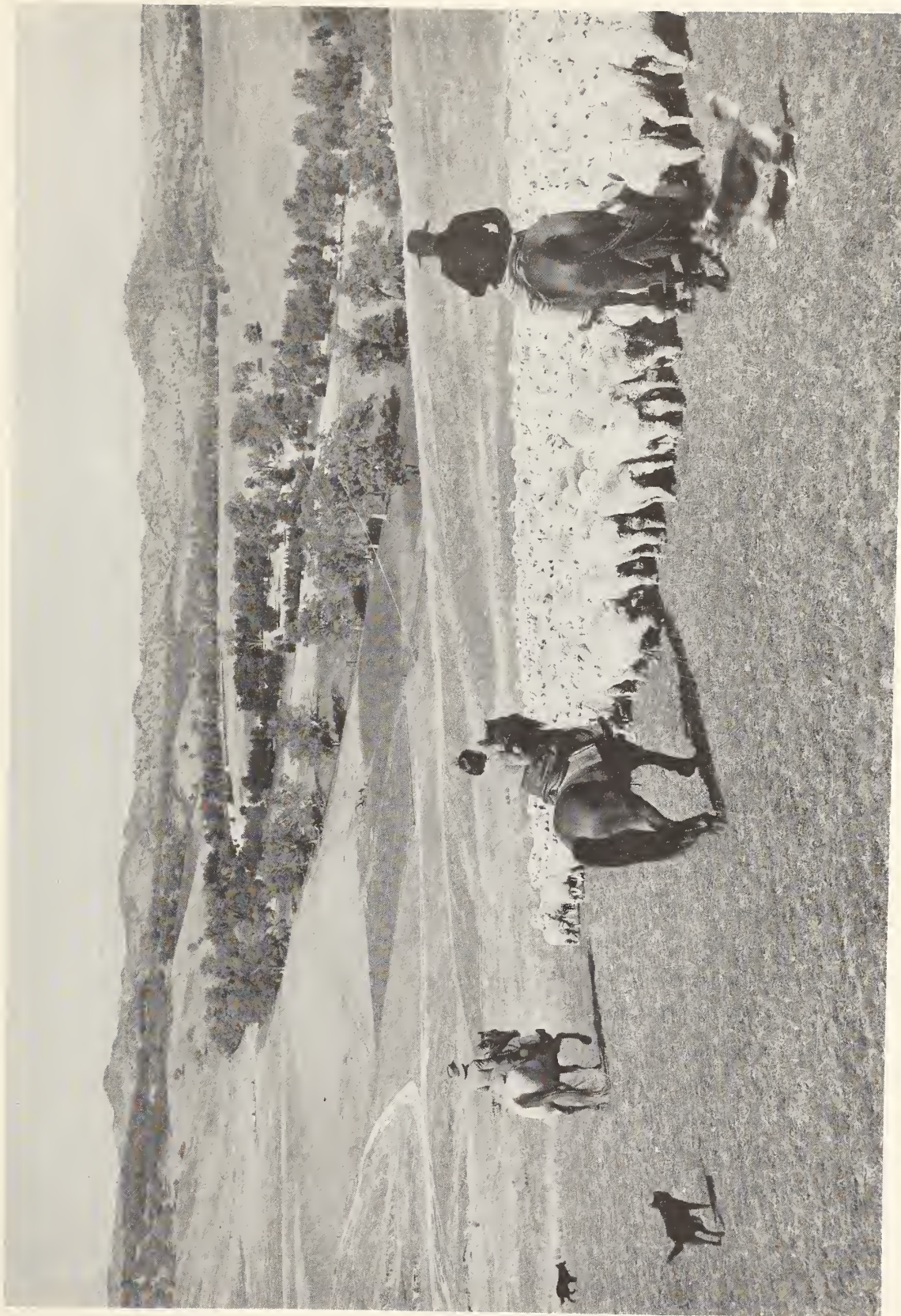


Figure 5.--Merinos being mustered for shearing on the southern tablelands of New South Wales. In the background is the Murrumbidgee River. The dark patches seen on the river flats are irrigated plots of lucerne (alfalfa).

Table 5.--Production of specified commodities, Australia, average 1956/57-1960/61 and 1961/62-1965/66, annual 1966/67-1968/69

Commodity	: Average : : 1956/57- : 1960/61	: Average : : 1961/62- : 1965/66	: : 1966/67	: 1967/68 : 1/	: 1968/69 : 2/
	-1,000 tons-				
Wool, greasy basis.....	716	780	799	802	831
Mutton and lamb.....	494	599	595	659	630
Beef and veal.....	792	941	879	909	965
Milk.....	6,296	6,962	7,471	7,022	7,335
Eggs.....	117	138	174	195	n.a.
Wheat.....	5,004	8,222	12,699	7,547	14,424
Barley.....	1,111	978	1,397	823	1,656
Oats.....	805	1,178	1,943	731	1,415
Sorghum.....	167	228	318	267	373
Corn.....	157	169	191	191	193
Rice, paddy.....	111	150	214	220	242
Apples.....	252	340	370	373	377
Pears.....	103	133	135	145	133
Peaches.....	54	97	120	116	122
Grapes (total).....	519	611	696	599	644
Dried vine fruits.....	83	69	105	83	n.a.
Cotton.....	2	8	17	32	34
Tobacco.....	5	13	12	11	13
Sugarcane.....	9,531	12,936	16,953	17,258	19,103

1/ Subject to revision.

2/ Estimated.

Sources: Commonwealth Bureau of Census and Statistics and Bureau of Agricultural Economics, Canberra.

Most of the mutton and lamb is produced in New South Wales and Victoria, and almost 85 percent of the production is consumed in Australia. Production of mutton and lamb has shown an almost steady rise, though dropping slightly during the recent drought. In 1967/68, production surpassed predrought levels, reaching a high of 659,000 tons; estimates for 1968/69 are somewhat lower.

Beef cattle.--Beef cattle are raised mainly in the eastern States (Queensland carries some 45 percent of the beef cattle population), the Northern Territory and the Kimberley district in the north of Western Australia. Since cattle have generally been less profitable to raise than sheep, they have been produced in those parts of the country which are the least suited to other agricultural uses. However, since World War II there has been considerable research to develop and improve cattle-raising areas and practices. In the southeast and in parts of Western Australia where rainfall is adequate, pastures are being cleared, fertilized, and planted with legumes and grasses.

The Australian climate permits year-round grazing and grain feeding is normally limited to periods of drought, but research is being done to find economical means for feedlot fattening. In Queensland and New South Wales, cattle are often fattened on hay and green fodder. Biological control of rabbits with myxomatosis has permitted an increase in livestock feed, but since rabbits have developed an immunity to this disease, a poison called "1080" is now being used. Kangaroos and wallabies are hunted continually to limit their consumption of range feed.

Although one-third of Australia's beef cattle are raised north of the Tropic of Capricorn, this region generally produces only 15 percent of the country's beef (fig. 6). Production is limited by unfavorable conditions--in the dry season pastures deteriorate, and during the wet season parasites and tick-carried diseases thrive. While ticks can be controlled to an extent by livestock dipping, they are still a serious problem. Many properties in the Northern Territory and Western Australia are operated by managers employed by large pastoral companies.

Recently cattle production in the north has been changing. The open-range system is giving way to more controlled breeding and grazing, and greater efforts are being made at pasture improvement and parasite control (fig. 7). All-weather roads, reservoirs, and wells for stock water are being constructed. A modern cattle industry is being developed, and U.S. and other foreign groups are investing in the area. In 1967, an American company, the Tipperary Land Corporation, invested almost \$10 million to buy one of the largest cattle stations in the Northern Territory. The company plans a long-range program of cattle and pasture improvement, and will subdivide the land and sublease it. The success of this operation could lead to a revolutionary development of the northern part of Australia. The Tipperary station is on the Daly River and occupies an area of 3,560 square miles.

In 1964, the number of cattle in Australia reached a high of 19 million head (about 14 million were beef cattle), compared with approximately 16.7 million during 1956-60. The number of cattle increased as a result of a steady upward trend in world meat prices and the protection from the 15-year Meat Agreement with the United Kingdom. (This Agreement ended in 1967.) During 1965 and 1966 the number of cattle declined as a result of drought-induced slaughter to about 17.9 million. But since then, cattle numbers have shown a recovery and in 1968 were estimated at 19.2 million (table 6).

Beef and veal production has about doubled since the early postwar years, reaching 909,000 tons in 1967/68. Meat output for 1968/69 is estimated to be even higher at 965,000 tons.

Australia is the second largest producer of tallow, following the United States. In 1965/66, Australian production reached an alltime high of 250,891 tons. Production the following year showed a decline to 223,432 tons, partly as a result of the drought and partly because of a trend toward slaughter of younger, leaner cattle. Since tallow comes mainly from cattle and sheep, output of tallow is largely influenced by factors that govern meat production. The extraction rate has been steadily increasing, however, probably because an increasing proportion of both beef and mutton has been exported in boned-out



Figure 6.--Aborigines mustering cattle at Jay Creek near Alice Springs, Northern Territory.



Figure 7.--Watering paddock at the improved Alice Springs trucking yards in the Northern Territory.

Table 6.--Sheep and cattle numbers, Australia, 1961-68

Year ending March 31	Sheep and lambs	Cattle
	<u>Million</u>	
1961.....	152.7	17.3
1962.....	157.7	18.0
1963.....	158.6	13.5
1964.....	165.0	19.1
1965.....	170.6	18.8
1966.....	157.6	17.9
1967.....	164.0	18.3
1968 <u>1</u> /.....	195.0	19.2

1/ Estimated.

form, thus making more material available for boiling down. Domestic consumption of tallow, the major ingredient of industrial and cooking margarine in Australia, is relatively high and increasing.

Australia produces approximately 7 percent of total world hide production. Production of hides and skins, like tallow, is directly related to the number of stock slaughtered. Recently, there has been an improvement in quality of hides through the introduction of new mechanical equipment for skin removal.

Dairy cattle.--The dairy industry ranks fourth in Australian primary production. Most of the dairy cattle are located in areas of reliable rainfall and temperate climate or in inland areas where there is irrigation, mainly in Victoria. These areas include the southwest of Western Australia, the southeast of South Australia, parts of Victoria, northern Tasmania, and along the New South Wales coast and the southeast coast of Queensland. In the southern dairying areas, the cattle graze mainly on improved pastures, supplemented with hay and silage in winter; in the northern dairying areas where the environment is less suitable, there is more supplemental feeding of fodder and concentrates. The average size herd is about 50 cows, milked mechanically. Dairy cattle numbers were reported in March 1968 at about 4.5 million (of which about 3 million were milking cows), which represents about an 8-percent decrease from the high of 1964. Most of the decrease was in the drought-affected areas of New South Wales and Queensland.

Approximately 62 percent of whole milk production is used for butter, 9 percent for cheese manufacture, and 6 percent for preserved milk products; the rest is consumed as milk or ice cream. Milk production for 1966/67 reached its sixth successive high of about 7.5 million tons, but dropped to 7 million tons in 1967/68 because of drought. Estimated production for 1968/69 is higher at 7.3 million tons.

Butter is produced in large central factories, which may be either cooperatively or independently owned. Butter production for 1966/67 was 222,000 tons, a 6-percent increase over 1965/66. Estimated production for 1967/68 is down to 196,000 tons because of drought in Victoria, South Australia, and New South Wales. Cheese production for 1966/67 was 70,000 tons, a 17-percent increase over 1965/66. Production in 1967/68 is estimated at 71,000 tons. Preserved milk products are manufactured mainly in Victoria, which produces about 68 percent of the total; New South Wales accounts for about 15 percent. Production of casein for 1966/67 was estimated at over 20,000 tons, down sharply from the 23,000 tons produced in 1965/66. Most of the casein produced is exported.

Although the scheme to reconstruct the dairy industry by amalgamating dairy farms will reduce the number of farms, milk production may well increase through more efficient operations. No reduction in the exportable surplus of butter, cheese, or powdered skim milk is expected.

Australia's fifth 5-year Dairying Industry Stabilization Plan, which will run from July 1, 1967, until June 30, 1972, provides an annual subsidy of not less than \$30.2 million for butter, cheese, and related butterfat products containing 40 percent or more butterfat. The purpose of the Plan is to maintain the dairy farmer's income at reasonable levels, to provide for farm and factory reconstruction and amalgamation where necessary to improve the economics of the industry, and to overcome some of the problems of the changing marketing pattern for dairy products, both within Australia and overseas. The Commonwealth Dairy Produce Equalization Committee equalizes returns to those manufacturers who participate in a fund from all sales (domestic and overseas) of butter and cheese. The equalization fund is supplemented by the Government and subsidies (made only on factory-produced butter and cheese) are distributed by the factories to the milk suppliers. The Government's underwriting guarantee of equalization values for butter and cheese is subject to annual revision with a minimum of \$0.38 per pound of commercial butter.

To encourage exports of processed milk products (and to divert milk from the manufacture of butter and skim-milk powder of which there is an oversupply in world markets), the Processed Milk Products Bounty Act of 1962 has been extended to June 30, 1972. This Act provides for Government payment of a maximum of \$896,000 annually on the export of processed milk products. The subsidy helps the processors to remain competitive and maintain sales to export markets.

Poultry.--Official data for both eggs and poultry meat have been kept only since the Poultry Industry Levy Act was passed in 1965. In 1966/67 there were approximately 9.5 million leviable hens in Australia. Egg production in 1966/67 was at an alltime high of 145.6 million dozen, almost 10 percent more than the 1965/66 total of 132.7 million dozen. The increasing production of eggs in Australia has led to a growing surplus and a drop in prices. Production of poultry meat in 1966/67 at 93,654 tons showed a 26-percent increase over the previous year. Although both turkeys and broilers are being produced and consumed at an increasing rate, production is climbing even faster than consumption, providing a surplus for export.

Selected Crops

Wheat.--Wheat, the most important crop in Australia in terms of area, production, and exports, accounts for almost half of the area cropped and for more than two-thirds of that sown to cereals. In 1966/67, wheat production reached a record of 12.7 million tons; in 1967/68, while acreage was at a record high of 22.7 million acres, worsening drought conditions limited production to 7.5 million tons (tables 7 and 8). Widespread rains in May 1968 broke the drought and forecasts are optimistic that the 1968/69 crop may approach 14 million tons; nearly 27 million acres have been planted to wheat.

Overall wheat yields in Australia have increased over 60 percent during the past 30 years through advances in plant breeding and improved cropping practices. Most of the wheat crop is grown for grain, and is composed almost exclusively of white flour varieties. Although wheat is grown in all States of Australia except Tasmania, the main producing areas have been located near the southern coast in the 10- to 22-inch rainfall belt and along the eastern part of New South Wales and Queensland where the average annual rainfall is 20 to 30 inches and the winters are mild. In these areas, the ley-farming system is prevalent.

Table 7.--Wheat: Area, production, yield, Australia, 10-year averages, 1941-50 and 1951-60, annual 1961-69

Year ending June 30	Area	Production	Yield per acre
	Million acres	Million bushels	Bushels
10-year average:			
1941-50.....	11.4	146	12.8
1951-60.....	10.2	174	17.1
1961.....	13.4	274	20.4
1962.....	14.7	247	16.8
1963.....	16.5	307	18.6
1964.....	16.5	328	19.9
1965.....	17.9	369	20.6
1966.....	17.5	260	14.8
1967.....	20.8	467	22.4
1968.....	22.7	276	12.2
1969 <u>1</u> /.....	26.6	514	19.3

1/ Estimated.

Source: Quarterly Review of Agricultural Economics, Commonwealth Bureau of Agricultural Economics, Canberra.

The area with the greatest potential for expansion of wheat production is in Western Australia, where land may be obtained cheaply from the Government. Although yields per acre are lower in this area, large-scale, mechanized operations permit farmers to sell their wheat competitively in world markets. In the Wheat Belt of Western Australia, 500,000 to 750,000 acres of land are being cleared annually. From the area cleared, a potential 150,000 to 200,000 additional acres could be sown to wheat during the next 15 years, making a possible expansion of 3 million acres. Wheat cultivation could also be intensified since nitrogenous fertilizer is becoming less costly.

A new wheat stabilization scheme for the 5 years 1968/69-1972/73 has been put in operation. The terms of this scheme include a guaranteed export price on 200 million bushels of wheat per year, a substantially higher domestic price, provision for a stabilization fund, and an addition to the home consumption price to meet the cost of shipping wheat from the mainland to Tasmania. The guaranteed domestic and export prices are set for 1 year only, and will be subject to adjustment according to a new cost-of-production index which covers only actual cash costs. Imputed items included in the cost index in the past, such as the theoretical interest payable on land and capital assets, will no longer be considered, as these have been largely responsible for the steady rise in the "assessed cost of production" in recent years. For the 1968/69 season, the guaranteed export price has been set at \$1.62 a bushel for bulk wheat f.o.b. vessels at main ports. The Wheat Prices Stabilization Fund will be financed from an export charge (maximum of 17 cents a bushel) when the actual export return exceeds the guaranteed price by 6 cents a bushel. If the export returns for the season are less than the guaranteed export price, the deficit will be made up from the Stabilization Fund. If the balance in the Fund is insufficient, the deficit will be met by a Commonwealth subsidy. Although the term of the new scheme is for 5 years, the Board will have full marketing powers for 7 years.

Coarse grains.--Oats are usually second in importance to wheat among the grain crops and are generally grown as a rotation crop with wheat. Oats are the preferred stock grain of the winter cereals, and about 80 percent of the production is used domestically. Average annual oat production for the past 10 years has been about 1.2 million tons. Production in 1966/67 reached an all-time high with 1.9 million tons, but, as a result of poor weather conditions, output in 1967/68 fell to 731,000 tons. The outlook for the 1968/69 season is for a substantial recovery in oat production to approximately 1.4 million tons. Record acreages of oats have been planted in all States, not only to replenish farm stocks seriously depleted during the 1967/68 drought, but also to provide grazing crops. Area sown to oats has risen substantially since World War II, and although yields are mainly affected by seasonal conditions, they have tended to rise somewhat. Over one-third of the oat production comes from New South Wales; Victoria, Western Australia, and South Australia are also important producing areas.

Barley production from 1956/57 to 1961/62 averaged just over 1 million tons annually. In 1966/67, production reached a high of 1.4 million tons, but fell to 823,000 tons in 1967/68. Plantings of barley for the 1968/69 season are estimated to be at a record level of over 3 million acres as a result of

the short crop harvested last season and because strong demand for stockfeed and industrial use has depleted stocks. Production for 1968/69 is estimated at a high of almost 1.7 million tons. About 80 percent of the barley crop is grown for malting. South Australia produces about half the total crop, but considerable quantities are also grown in New South Wales, Victoria, and Queensland (fig. 8). In recent years production in Western Australia has increased substantially.

Grain sorghum has been grown mainly in Queensland and New South Wales. Sorghum production, which during 1961/62-1965/66 averaged 228,000 tons annually, has generally trended upward. Output in 1968/69 is estimated at a high of 373,000 tons. Until 1966/67, when Japan became Australia's main market for grain sorghum, most of the production was consumed in Australia. With satisfactory export prices, grain sorghum could compete with wheat for acreage in Australia's warmer areas where both are grown on dry land. In irrigated areas, more than one crop of sorghum could be produced per year. The Emerald irrigation scheme on the Nogoa River (see p. 5) is expected to provide additional acreage for grain sorghum production. In the Northern Territory, the Tipperary Land Corporation, mainly financed by U.S. capital, plans to invest more than \$22 million to crop a total of 192,000 acres over a 5-year period. In 1968 the Corporation harvested its first crop of grain sorghum on 12,000 acres near Darwin and made an initial shipment of 13,000 tons to Japan, which had contracted for the entire crop. In New South Wales plans are being made for an irrigation development on the Macquarie River, which will make over 80,000 acres available for growing grain sorghum; this production is also intended for export to Japan. A first planting of 700 acres of grain sorghum in the Esperance area of Western Australia is reported to have resulted in satisfactory yields, and reports indicate that about 10,000 acres will be planted there in 1968/69. Most of the harvest from these plantings will also be marketed in Japan. The potential exists for development of about 2 million acres of sorghum crops in the southern part of Western Australia. Grain sorghum production is also planned for newly developed irrigation sections of the Ord River district in Western Australia.

Corn production in Australia since 1960 has averaged about 173,000 tons annually, but 1968/69 is expected to be a good year with production estimated at 193,000 tons. About 205,000 acres are planted to corn, a decrease of 4,000 acres from the previous year.

The manufactured stock feed industry in Australia has grown rapidly in recent years, and about 20 percent of total grain production (wheat, oats, corn, and barley) is used for this feed. The growth of this industry reflects a greater use of scientifically determined feed rations in the egg and broiler and dairy cattle industries.

Rice.--Although rain-grown rice has been planted for many years in coastal areas of Northern Queensland, the production of commercial rice has been limited almost entirely to the Murrumbidgee and Coleambally Irrigation Areas of southern New South Wales. Rice in this region is produced mainly in conjunction with sheep. Acreage is rigidly controlled by means of water allocation to maintain reasonable returns to growers. This restriction has led to innovations



Figure 8.--A combine harvesting barley in Victoria.

with fertilizers and new varieties and has achieved for New South Wales yields among the highest in the world. Some growers in this region realize nearly half their incomes from the 80 to 90 acres allocated for rice on their properties of about 600 acres.

In recent years the total area sown to rice has been increasing about 4,000 acres a year. This rate of growth can be expected to continue, unless there is a serious decline in returns to growers. Rice acreage for 1968/69 is estimated at 83,000 acres. Australian rice production has risen steadily for the past 10 years and for 1967/68 was about 220,000 tons of paddy, almost 70,000 tons over the 1961/62-1965/66 average. Estimated production for 1968/69 is even higher at 242,000 tons.

Although the bulk of rice produced in New South Wales has been of the heavy-yielding, short-grain variety, this is not the type usually favored in the Asian markets. Consequently, since 1962/63, the New South Wales Marketing Board has been encouraging the production of long-grain rice. Until now there has been only a limited response, but the Board has estimated that by 1970, perhaps 30 percent of Australian production will be of the long-grain varieties. A second innovation in the Australian rice industry is the introduction of a successful new variety, Kulu, a semi-long-grain rice. In 1966/67, the Rice Marketing Board acquired about 2,032 tons of this rice for commercial production.

Some experimental rice growing has been undertaken recently in Western Australia and the Northern Territory. In 1968, with only a small beginning crop, the Burdekin River area of northern Queensland emerged as a rice-producing area with a significant potential for growth. The only limiting resource is water, and the Queensland Government is considering proposals for dam sites on the river. Northern Queensland has the advantage of a longer growing season than New South Wales and for this reason is better able to grow the favored long-grain rice. The Queensland growers have already formed their own cooperative rice producers association which will handle processing and marketing of the rice crop.

Orchards and vineyards.--Tree fruits are produced under both irrigation and natural rainfall, but fruits for drying and canning are mainly grown under irrigation. Holdings in the irrigation areas range from about 15 to 40 acres. Annual yields fluctuate because of weather, pests, and diseases, but a long-term increase in yields is the result of planting improved varieties and better orchard management and cultural practices. Overall fruit production has risen over the years.

Peaches, plums, and apricots are grown along the coasts under natural rainfall, and inland, under irrigation. Over half of the peach acreage is located in Victoria and nearly one-third in New South Wales. Peach production for 1967/68 was 116,000 tons. Production for 1968/69 is estimated at an all-time high of 122,000 tons. The canned fruit industry is well organized and many packing sheds and canneries are cooperatively operated by the growers. Output of canned fruit has advanced markedly since World War II. Apples, the most widely planted tree fruit in Australia, are grown almost exclusively under natural rainfall. Apple production has shown a steady rise, reaching 373,000 tons in 1967/68. Production for 1968/69 is estimated even higher at 377,000 tons.

Australia is the world's third largest producer of dried vine fruit, following the United States and Greece. Production is located mainly in the irrigated lands in Victoria, South Australia, and New South Wales. Costs of labor and mechanization are high, and elaborate drying techniques must be used because of uncertain weather conditions. Changes in the postwar bearing acreage of vines grown for dried fruit have been relatively small, but there has been an upward trend in average yields per bearing acre.

Sultanas account for about 80 percent of the annual production of dried vine fruit. Dried vine fruit production in 1966/67 was almost 105,000 tons. However, as a result of unfavorable weather and a strong demand for grapes from wineries, the 1967/68 crop is estimated to be about 22.4 percent less. The outlook for the 1968/69 season is for a substantial recovery in production of dried vine fruits, provided demand for dual-purpose grapes from wineries becomes more normal.

Under the stabilization scheme for the dried vine fruits industry, the Government guarantees a minimum price to producers of currants, sultanas, and lexia raisins. This is a two-price scheme which tries to achieve domestic prices above export parity. A quota is placed on domestic sales, and returns

from all markets are equalized. A minimum price to producers is established each season. If the average return falls below the minimum price, the difference is made up from stabilization funds for each product. These funds are built up by contributions from growers when average seasonal returns exceed production costs by a specified amount. If the stabilization funds are exhausted, the Government guarantees necessary funds. The current stabilization plan ended with the 1967/68 season, and renewal of the plan for a further 5 years is under consideration. Modifications of the plan are sought by the industry.

Cotton--Cotton has long been grown in Queensland without irrigation, but with the introduction of irrigation a few years ago cotton production has expanded dramatically. In 1959 the Keepit Dam on the Namoi River of New South Wales was completed, providing water for extensive irrigation; and in 1961, two cotton growers from California introduced commercial cotton production to the Namoi Valley. This venture was so successful that it was followed by a large investment of American capital and expertise which has stimulated the development of a large cotton industry. The Namoi Valley is now producing about 75 percent of Australia's total cotton crop. Total planting in the Namoi Valley for the 1967 season was about 45,000 acres.

Commercial cotton production in the Ord River Valley in Western Australia began in 1963, and by 1965, production in this area ranked second, after New South Wales (fig. 9). Further expansion of cotton production is expected when the Ord River Project in Western Australia and the Emerald irrigation scheme in Queensland, which were approved by the Government late in 1967, are completed. Cotton production in the new areas is highly capital-intensive and fully mechanized. Contributing to the expanding production of cotton have been good prices and a high bounty, and unless bounty payments are increased, non-irrigated cotton production will not survive.

Until 5 years ago, Australia imported most of its cotton requirements, producing only about 3,000 tons in 1963/64. Since then, production has risen steadily, except during 1966/67, when there was a slight decrease. In 1967/68, production reached a high of 31,661 tons, with area planted at 74,000 acres (nearly 30 percent over the previous year). Production for 1968/69 is estimated at 34,000 tons, almost double that of 1966/67. The added production is coming chiefly from new plantings in the Macquarie and Namoi Valleys. The Queensland and Ord River cotton areas are also expecting excellent crops. Australia has the potential to be self-sufficient in cotton production, although imports of long-staple cotton are still necessary. However, new varieties now under trial may eventually supply the bulk of this type of cotton, making Australia completely self-sufficient.

A 5-year subsidization plan for cotton came into effect in January 1964. Under this plan, a subsidy not to exceed \$4.48 million per year has been paid on all domestic raw cotton marketed within Australia. In the initial years of this plan the crop was small enough so that the funds available were adequate to pay the full bounty authorized by the program. But with increasing production, the subsidy has varied with total volume, with funds being shared by the producers on the basis of pounds of cotton sold to the local mills. The



Figure 9.--Cotton crop, Ord River Valley, Western Australia.

cotton bounty, which was to expire in early 1969, has been renewed for another 3 years, but will be phased out as follows: 1969 crop, \$4.48 million; 1970 crop, \$3.36 million; and 1971 crop, \$2.24 million. Bounty payments will then cease completely. The system of bounty payments has been changed from one on actual ginner's sales to Australian spinners to payments on the basis of production. Under the new scheme the bounty incentives and discounts for quality will be continued and, if necessary, increased.

Tobacco.--Next to cotton, tobacco has been Australia's most rapidly expanding crop. Area in tobacco production increased from about 4,500 acres in 1950 (when production was less than 2,000 tons) to a high of about 29,000 in 1964. Since then acreage has decreased somewhat. In 1967/68, about 22,600 acres were planted to tobacco and about 12,600 tons of dried leaf tobacco were produced. The main tobacco-growing State in Australia is Queensland, followed by Victoria. These two States account for over 90 percent of the total Australian tobacco area. Australian-produced leaf has generally been acceptable to Australian consumers only when blended with imported leaf.

The Government has long assisted the tobacco industry by allowing a concessional tariff on imported leaf provided that manufacturers use a specified percentage of domestic leaf in their manufactured blend. This percentage gradually increased from 3 percent for cigarettes and 15 percent for cut tobacco in 1938, to 50 percent for each by 1965. Manufacturers are required to purchase Australian production and carry in stock sufficient quantities to meet the 50-percent mixing requirement. Thus prices and demand for domestically grown tobacco have been artificially maintained above normal marketing levels. Production has steadily increased as a result, and in 1965, the Commonwealth Government found it necessary to introduce a stabilization plan for the tobacco industry. The Tobacco Board, which administers the 4-year Tobacco Stabilization Plan, divides an overall marketing quota of 26 million pounds a year (about 50 percent of current total factory requirements) among the major producing States of Queensland, Victoria, and New South Wales. Each State then allocates the quotas for individual growers. The marketing quota is not a normal marketing quota, but a minimum price guarantee. The guaranteed minimum price is about \$1.20 to \$1.30 a pound (by far the highest price in the world). Because there are no production controls and the total crop can be sold, production is likely to exceed the annual so-called marketing quotas.

Sugar.--Sugarcane is grown in Australia mainly along the coastal areas in Queensland and northern New South Wales where rainfall is sufficient and soil is suitable. About 95 percent of the production comes from Queensland. There has been an almost steady growth of sugar production, due to both expanded acreage and higher yields. Mechanical cane cutters are being increasingly employed. In 1966/67 cane production for crushing was almost 17 million tons, and production for 1967/68 is estimated to be slightly higher at 17.3 million tons. About 585,000 acres were harvested in 1967/68.

AGRICULTURAL TRADE

Market Development and Trade Promotion

The Department of Trade and Industry is responsible for market development and trade promotion sponsored by the Government. With liberal financing by both Government and industry organizations, the Department has greatly expanded its programs in recent years to promote Australian products in foreign markets. Direct assistance is given to market development programs through payments to commodity boards or producers.

Overseas trade is promoted by the Department through regular trade missions, an extensive Trade Commissioner Service, major publicity campaigns, and participation in international trade fairs and exhibitions. The Department's Trade Commissioner Service is also responsible for commercial intelligence, including surveys of market prospects, advice on selling and advertising methods, arranging introductions with buyers and agents, providing reports on overseas firms, and generally advising and assisting business visitors. There are trade commissioner posts in 32 countries, including eight in the Far East. In the interest of keeping overseas shipping facilities available, the Department also arranges negotiations between exporters and shipowners concerning rates and services on overseas shipments.

Outside of the Department, the major Government assistance to exporters is through the Export Incentives Program, the Export Payments Insurance Corporation (EPIC), and the negotiation of trade treaties and arrangements to develop new markets and extend existing ones. The Export Incentives Program, introduced in 1961, allows tax deductions for export market development expenditures and a payroll tax rebate to employers who have increased export sales.

The EPIC, an autonomous Government agency, was established in 1956 to encourage export trade by protecting exporters against loss from nonpayment of overseas accounts. It covers commercial and political risks which cannot be insured through usual channels. In 1962, the Term Loan Fund was established to enable trading banks to provide medium-term financing for developmental projects and for export transactions. To provide further credit for large export transactions, the Export Refinance Corporation was established early in 1964 and the EPIC Act was amended to allow EPIC to guarantee loans made by the trading banks.

Marketing boards.--Marketing boards control the marketing of the main commodities. At the present time there are 11 such boards created under Commonwealth or joint Commonwealth-State legislation. Of these, nine (Apple and Pear, Canned Fruits, Dairy Produce, Dried Fruits Control, Egg, Honey, Meat, Wheat, and Wine) are export marketing boards. Two boards, the Australian Wool Board and the Tobacco Board, are not concerned with export trade. All of the boards are active in market development and trade promotion.

Promotional activities are usually coordinated under the Overseas Trade Publicity Committee, on which all export marketing boards except wheat are represented. Large amounts are also spent directly by the boards. All

expenditures by the Overseas Trade Publicity Committee are based on equal contributions by the Boards and the Department of Trade and Industry. In past years, the United Kingdom has been the recipient of more than half the Committee's promotional expenditures overseas. Recently emphasis on market development activities has been changing as a result of the declining importance of the United Kingdom as a market and the increasing importance of the United States, Canada, Europe, and southeast Asia (particularly Japan).

In addition to the Commonwealth boards, there are some 50 marketing boards under State legislation, which mainly control the marketing of various commodities within the States.

The Wheat Board is the sole marketing agent for wheat and also controls flour exports by millers. The Board does not participate in promotional activities under the Committee but generally relies on direct contacts with customers. It also participates in trade missions to other countries and sponsors visits of foreign trade delegations to Australia. Australia sells wheat for cash to any customer, but has made donations to India and other underdeveloped countries. Major promotional activities have been in Japan and South America. Although the Wheat Board can deal only in wheat, some third-country barter sales have been made.

The Meat Board was reconstituted under the Meat Industry Act, 1964/65. It has broad powers in beef promotion, research, and marketing, particularly in overseas markets. The Board controls the kinds of meat exported and the destinations to which it is shipped. However, actual exports are handled through private companies. The operations of the Meat Board are financed by a levy on all livestock slaughtered within Australia for human consumption. Major overseas promotions are in the United Kingdom, Europe, and Japan.

The Apple and Pear Board was established under the Apple and Pear Organization Act of 1938. It controls exports and is concerned with the development of markets and improvements in production and quality. The Board is financed largely from an export levy. Overseas promotion is mainly in the United Kingdom, Germany, Sweden, Denmark, France, Singapore, and Hong Kong.

The Canned Fruits Board's main function is to assist and promote export of Australian canned fruits and to improve production, quality, and transportation and storage facilities. The Board is financed through levies and duties on both canned fruit exports and domestic sales; deficiencies in the Board's funds are made up by the Federal Government. A large proportion of funds is spent outside the normal Overseas Trade Publicity Committee program. Canned peach exports to Western Europe, outside the Commonwealth countries, are subsidized by the Board.

The Dried Fruits Control Board controls exports of dried vine fruits through export licensing and promotes their sale and consumption outside Australia. The Board is financed by a levy on exports. Most of the promotional expenditures are in the United Kingdom, the main market. Domestic promotion is carried out by the Australian Dried Fruits Association.

The chief function of the Australian Wine Board is to improve the quality of Australian wine and brandy and to promote their sale both domestically and overseas. The Board is financed by a levy on grapes delivered to the wineries or distilleries. The largest overseas promotional expenditures are in the United Kingdom. Promotion in Canada has recently increased somewhat and although Japan is still a minor market, promotion is also on the upturn there.

Since organized marketing for eggs was introduced in the 1920's, intra-state marketing of eggs has been regulated by State marketing boards. Control by these boards is quite limited and only about half the domestic consumption of shell eggs is marketed through them. In 1962, the Council of Egg Marketing Authorities of Australia was formed to enable the egg industry to act as one body. The Council drew up a marketing scheme which was the basis for new poultry industry legislation in 1965. This legislation should encourage a substantial expansion of exports. The Australian Egg Board controls exports, including the purchase and shipment of eggs and egg products. The State Egg Boards have pooling arrangements with the Australian Egg Board, so that any losses incurred from surplus egg sales abroad will be shared equitably by all commercial egg producers. The fund for this purpose is derived from a levy on all commercial producers (except those in the Northern Territory) who own in excess of 20 fowls over 6 months old. In 1966 the legislation was amended so that part of the levy would be allocated for approved research, for which the Government will share half the cost. During 1966/67, the Council of Egg Marketing Authorities set aside \$112,000 from the fund for research. The promotional expenditures of the Australian Egg Board are chiefly in the United Kingdom, Japan, and the Arabian Gulf area.

The Australian Dairy Produce Board engages in marketing of butter and cheese in the United Kingdom market only, and regulates exports of other processed milk products by private exporters. It is also responsible for sales promotion in export markets. The Board is financed by various levies. There have been increasing advertising and publicity campaigns in Japan, supported mainly by the Australian Government. General promotional activities are also in the Middle East and Mediterranean areas, Germany, Malta, Greece, southeast Asia (particularly Malaysia, Singapore, Thailand, Hong Kong, and the Philippines), Peru, and the West Indies. The Board's substantial investment in southeast Asia dairy plants has been instrumental in moving large quantities of butter oil and skim milk to these markets. Legislation enacted in 1958 enables the Board to promote the sale of butter and cheese in Australia and also to encourage research activity.

The Tobacco Board, which is dominated by the grower and State government representatives, controls all domestic trade in tobacco. Australia is highly protectionist on imports of tobacco with a regular duty of about 80 cents a pound and a penalty duty of 96 cents a pound. (U.S. duty on cigarette leaf is 12.75 cents a pound.)

The Queensland Sugar Board has effective monopoly power in the Australian market because production is geographically limited. There is an embargo on sugar importations. Domestic production is regulated, and the price of sugar consumed in Australia is fixed by an agreement between the Commonwealth and Queensland Governments. Quotas are in effect at the refineries to maintain

production at the estimated requirements of the domestic and export markets. Farm production is regulated according to the quota of the mill that the farm supplies. Australia is attempting to negotiate a new International Sugar Agreement (the previous agreement expired at the end of 1968) to improve quota and price provisions. Because of low world sugar prices, the Government in 1966 loaned cane growers about \$21.3 million, allotted in proportion to cane deliveries. The loan, with easy terms and low interest, is not subject to interest until 1970.

The Australian Barley Board is a joint Victoria-South Australia enterprise empowered to sell barley abroad. Western Australia and Queensland have separate barley marketing boards which export grain.

The Wool Board, which has been in operation since 1963, promotes the development of markets and supervises research programs. A stepped-up program of wool research is under way with the appropriation of a maximum of \$15.7 million annually by the Australian Government over the 3-year period, June 1967-70. Matching funds are being provided by the industry for a research program mutually acceptable to both contributors.

The Honey Board controls the export of honey, as well as promotional and research activities. The bulk of the Board's funds are devoted to promotion in the domestic market, but export programs are expanding steadily. The Honey Board participates in many major international trade fairs and displays organized by the Department of Trade and Industry. In 1965, the Honey Industry Act of 1962 was amended to enable the Board to draw money from the Commonwealth Reserve Bank to finance the purchase of surplus honey for sale in the markets of the United Kingdom and Ireland.

Trade Policy

The main purpose of Australian tariff policy is to enable the products of Australian industries to compete with imported goods, but protection is sometimes granted to industries that are vital to the country's economy. Duties are also imposed on some luxury imports--such as tobacco, wine, and spirits--to raise revenue.

A new Customs Tariff based on the Brussels Nomenclature was adopted in 1965 and revised in 1966 to make adjustments for the adoption of decimal currency. In addition to ordinary duties, primage duties are charged on some imports, but these are being progressively removed. To protect Australian industry, dumping duties are imposed on imported goods which are priced under their fair market value in the country of export. The Customs Tariff also contains bylaw rates, which permit goods needed by Australian industry and not reasonably available from Australian sources to be imported free of duty or at concessional rates. Temporary duties may be imposed to protect an industry that faces sudden and unforeseen competition from overseas suppliers; when the temporary duty will not suffice, quantitative restrictions may be used.

To prevent introduction of diseases, Australia maintains strict quarantine measures for imports of livestock, livestock products, and seeds and plants.

This practically prohibits the importation of cattle, sheep, pigs, and poultry, as well as fresh or frozen meats. Fruit imports are prohibited from areas which have Mediterranean fruit fly or citrus canker, and grains can be imported only under special license.

Certain goods are subject to export control and may be exported under prescribed conditions or not at all. Australia prohibits exports of live Merino sheep, koalas, and some other animals, and strictly controls the export of most birds. Export licenses also have been used to control the movement of capital out of Australia.

Australia has sought to expand and liberalize trade through the United Nations Conference on Trade and Development (UNCTAD), through the General Agreement on Tariffs and Trade (GATT), and through the Colombo Plan. To encourage trade with the developing countries, Australia favors nonreciprocal tariff preferences for certain of their products. In 1966, the Australian Government introduced a system of tariff preferences for the developing countries to assist them in exporting manufactured products. A recent waiver from GATT has permitted Australia to abolish import duties on handicrafts and cottage-industry products and to lower import duties on certain other goods. Australia also participates in international commodity agreements to reduce price instability for certain commodities, including sugar, wheat, and coffee.

Australia has bilateral trade agreements with 14 countries, many of which are not members of GATT. The significant feature of these agreements is the provision for reciprocal nondiscriminatory (most-favored-nation) tariff and trade-licensing treatment. All agreements provide for consultations on matters relevant to the agreement. Australia also has reciprocal arrangements with certain countries for mutual protection against unfair trading practices by third countries. Among Australia's formal bilateral trade agreements are those with the United Kingdom and Ireland, Canada, and New Zealand, and with six Asian countries.

Under the United Kingdom-Australian trade agreement of 1957 (which amended preferences granted under the earlier Ottawa Agreement of 1932), Australia is granted preferential tariffs for exports, including dairy products, eggs, fruits, and sugar. A Commonwealth Sugar Agreement renegotiated with the United Kingdom in 1966 and effective until 1973 gives Australia a quota of 340,000 tons of sugar at the f.o.b. price of \$134.40 a ton.

The Australian-Japanese Trade Agreement of 1963 includes all rights and privileges under GATT, provides for annual consultation between the two countries, and specifies quantities of wheat, barley, and sugar exports to Japan. An agreement with Malaysia gives Australia preferential tariffs for wheat flour, dairy products, and canned fruits in return for granting Malaysia special marketing rights in Australia for rubber, timber, and tin.

Under the New Zealand-Australia Free Trade Agreement, effective for a minimum of 10 years from January 1966, New Zealand granted Australia duty-free entry for certain commodities, including rice, dried vegetables and fruits, fresh pineapples and citrus, soybean and essential oils, and vegetable and flower seeds. Australia guaranteed New Zealand duty-free privileges for frozen

beans and peas, dried vegetables, seeds for planting, alfalfa meal, and vegetable and essential oils. Duties on other specified commodities involved in trade between the two countries will be phased out over 5- and 8-year intervals.

In April 1968, Australia signed a bilateral trade agreement with the Republic of China that guarantees each country most-favored-nation rights in the market of the other (although such rights have long existed in actual practice).

Trade in Major Agricultural Products

Australia's economy depends heavily on agricultural exports, and over the years a large proportion of Australia's agricultural production has been exported. In 1963/64, the value of exports of rural origin reached a high of \$2,405 million, which represented 77 percent of the value of all exports (table 9). This share decreased somewhat in the following years as a result of drought and lower world prices as well as the rising value of nonagricultural exports. For 1967/68, exports of rural origin were valued at over \$2 billion, and while volume was slightly lower than the previous year, export prices were lower for a number of commodities, especially dairy products, sugar, wool, and wheat. The estimate for total exports of rural origin for 1968/69 is higher at \$2.1 billion.

Table 9.--Production and exports of rural origin, Australia, average 1956/57-1961/62, annual 1961/62-1968/69

Period	Value		Exports of rural origin as a percentage of--	
	Production	Exports	Total production	Total exports
	Million dollars	Million dollars	Percent	Percent
Average:				
1956/57-1961/62...	2,847	1,551	54	76
1961/62.....	3,062	1,831	60	76
1962/63.....	3,375	1,842	55	76
1963/64.....	3,836	2,405	63	77
1964/65.....	3,865	2,159	56	73
1965/66.....	3,751	2,071	55	67
1966/67.....	4,282	2,254	53	66
1967/68 <u>1/</u>	3,781	2,059	54	60
1968/69 <u>2/</u>	4,345	2,106	48	n.a.

1/ Subject to revision. 2/ Estimated. Source: Quarterly Review of Agricultural Economics, Commonwealth Bureau of Agricultural Economics, Canberra.

Wool--Australian wool is of high quality and at the Boston market generally commands a premium price. Around 95 percent of Australia's wool production is exported. In 1966/67, wool contributed 43 percent of the value of agricultural exports and generally accounts for about one-third of the value of all exports (table 10).

Volume of greasy wool exports for 1967/68 is estimated at about 624,000 tons, showing a recovery from the drought, although still under the 1963/64 high of 626,000 tons (table 11). However, value of wool exports for 1967/68 will be affected adversely by devaluation and may drop by as much as \$107 million.

Australia's markets for raw wool have been changing in relative importance in the last decade, with Japan taking a larger proportion and the United Kingdom and EEC countries, less. Japan's share rose from 17 percent in 1955/56 to 33 percent 10 years later, while during the same period, the United Kingdom's share fell from 26 percent to 11 percent. Wool accounts for over half of the value of total exports to Japan, and is also important in trade with India, China, South Korea, and Taiwan (tables 12 and 13). Overall exports of Australian wool to the United States have been declining, although Australia still supplies the major part of the apparel wool.

Table 10.--Contribution by selected commodities to total value of exports of rural origin, Australia, average 1956/57-1958/59, annual 1964/65-1967/68

Commodity	: Average : : 1956/57- : 1964/65 : 1965/66 : 1966/67 : 1967/68 : 1958/59 : : : : : 1/
	: :- - - - - - - - - -Percent- - - - - - - - - -
Wool.....	: 59.3 44.9 45.9 43.2 42.8
Wheat (including flour)...	: 8.5 17.4 15.6 19.1 18.6
Meats.....	: 8.8 13.3 13.9 12.7 13.8
Dairy products.....	: 5.5 6.0 5.6 6.1 5.9
Sugar.....	: 4.8 5.8 5.1 4.9 5.6
All other.....	: 13.1 12.6 13.9 14.0 13.3
	: Total.....: 100.0 100.0 100.0 100.0 100.0
	: :

1/ Estimated.

Source: Quarterly Review of Agricultural Economics, Commonwealth Bureau of Agricultural Economics, Canberra.

Table 12.--Value of Australian agricultural exports to principal destinations, 1966/67

Commodity	World total	United States	Japan	United Kingdom	Mainland China	Italy	France	West Germany
Grains:					Million dollars			
Wheat.....	404.6	-	26.7	24.1	129.9	-	-	-
Barley.....	24.2	-	9.8	1.4	-	6.1	-	-
Oats.....	19.5	-	0.9	-	-	-	-	-
Rice (milled).....	12.2	-	-	1.2	-	-	-	-
Wheat flour (plain white)...	25.8	-	-	1.4	-	-	-	-
Sugar.....	111.5	-	23.1	45.5	-	-	-	-
Apples.....	20.5	-	-	10.0	-	-	-	4.6
Dried vine fruit.....	23.5	-	0.4	9.7	-	-	-	2.6
Peaches (canned).....	17.9	-	-	8.6	-	-	-	4.2
Wool, greasy.....	813.5	38.6	303.4	83.9	8.5	85.8	57.9	40.1
Meats:								
Beef and veal.....	222.0	162.6	5.3	33.0	-	0.7	0.3	-
Mutton and lamb.....	48.5	13.0	12.1	5.2	-	-	-	-
Dairy products:								
Butter 1/.....	72.6	0.6	4.6	44.7	-	-	-	-
Cheese.....	17.1	1.0	5.4	2.3	-	-	-	0.5
Condensed milk 2/.....	7.3	-	-	-	-	-	-	-
Dried milk.....	25.8	0.2	6.9	1.5	-	-	-	-
Hides and skins 3/.....	94.0	0.1	9.1	3.4	0.3	22.1	39.9	3.9
Other.....	297.8	53.8	23.6	66.4	0.5	14.5	6.3	16.9
Total.....	2,258.3	269.9	431.3	342.3	139.2	128.9	104.4	72.8

1/ Includes butter, butter concentrate, dry butterfat, butter oil, ghee, and other. 2/ Includes condensed, evaporated, sweetened, and unsweetened milk. 3/ Includes cattle, calf, horse, sheep, and lamb (excluding pieces).
Source: Overseas Trade, 1966/67, Commonwealth Bureau of Census and Statistics, Canberra.

Mutton and lamb.--Australia is the world's second largest exporter (after New Zealand) of mutton and lamb. Exports for 1967/68 were at a high of 115,000 tons. However, a drop to about 95,000 tons is estimated for 1968/69.

Until 1961, the United Kingdom was the leading importer of Australian mutton and lamb; since then the United States has been the major market every year but 1964/65. After the United States, the important markets are Japan, Canada, and the United Kingdom. In the Far East, leading markets after Japan are Singapore, Malaysia, Papua and New Guinea, and Hong Kong.

Beef and veal.--Australia has long ranked second after Argentina among the world's beef exporters, although in 1964/65 (when Australia exported a record of over 321,000 tons of beef and veal), Argentina held only a slight edge over Australia. In the following year, as a result of drought Australian exports of beef and veal dropped 13 percent, to about 278,000 tons, while Argentine beef exports increased nearly 17 percent, giving Argentina again a comfortable lead with 27 percent of total world exports, followed by Australia with 21 percent. Australian beef and veal exports for 1967/68 are even lower at around 255,900 tons, but for 1968/69 are estimated to rise to 264,000 tons. In recent years, Australian beef has been exported largely in fresh, chilled, or frozen boneless form.

Before 1959, the United Kingdom took the bulk of Australian beef, but since 1960 the United States has been the largest market, particularly for manufacturing-type beef. Australia's leading market for beef and veal in the Far East is Japan, followed by Singapore, Papua and New Guinea, the Philippines, Malaysia, and Hong Kong.

Hides and skins.--Over the past 10 years exports of hides and skins have increased by over 80 percent. Up to 35 percent of cattle hides, between 50 and 60 percent of calfskins, and over 80 percent of sheep and lamb skins are shipped abroad. The value of hides and skins exported in 1966/67 was about \$95 million, nearly doubling the amount 10 years earlier. France is Australia's main market for hides and skins, followed by Japan, Italy, and Germany. France took almost \$40 million worth of sheep and lamb skins in 1966/67; Italy was second with almost \$20 million. Japan is the largest market for cattle hides, followed by Germany. Hong Kong, the Philippines, India, and Taiwan are also important markets for hides and skins in Far East trade.

Tallow.--Australia is the second major exporter of tallow, following the United States. Australian exports of tallow (mainly inedible beef) showed an almost continual increase through 1962/63 when they reached a high of 119,395 tons, but by 1965/66, they had declined to a low of 66,481 tons. The following year, however, exports showed a recovery at 94,318 tons. The major buyers of Australian tallow are the United Kingdom, South Africa, Mainland China, Japan, and Malaysia. Pakistan, Burma, and Ceylon have also become important markets in the last few years.

Dairy products.--Exports of all major categories of dairy products have been increasing over the past 10 years. In 1966/67, dairy products contributed 6 percent of the value of exports of rural origin. In 1967/68, export earnings were somewhat lower, partly as a result of the currency devaluation in the United Kingdom. The United Kingdom has long been Australia's most important overseas market for dairy products. However, Britain's proposed entry into the EEC has emphasized the importance of developing other markets, particularly in Asia.

Butter is the most important dairy product marketed abroad and the proportion of butter production that is exported is increasing. Butter exports for 1966/67 rose sharply to 106,800 tons, a 24-percent increase over the previous year. However, exports for 1967/68 showed a decided drop to 80,500 tons. Estimates for 1968/69 indicate a rise to about 93,000 tons. The United Kingdom in recent years has generally taken about 80 percent of the total of Australia's real butter exports. In 1966/67, Japan became Australia's second most important market when exports to that country jumped to 5,234 tons, almost a sevenfold increase over the previous year's 797 tons. Malaysia, Singapore, Thailand, and Hong Kong are also important markets for Australian butter in Far East trade.

Australian cheese exports for 1967/68 were 34,600 tons, an alltime high, and the estimate for 1968/69 is even higher at over 35,000 tons. Cheese exports to the United Kingdom have fallen off sharply from 16,319 tons in 1964/65 to only 4,630 tons for 1966/67. However, this decline in shipments to the United Kingdom has been about balanced by a rise in exports to Asian countries, principally to Japan and the Philippines.

In 1966/67, Australia exported 72,400 tons of dried milk, a new record. The following year there was a decided drop to 57,915 tons, and estimates for 1968/69 are even lower. Japan emerged as a major purchaser of dried milk in 1966/67 and took over one-third of the exports, compared with one-tenth the previous year. After Japan, exports to the Far East go primarily to Malaysia, the Philippines, Ceylon, Thailand, and Singapore.

Casein exports have more than tripled during the past 10 years, reaching a high of 22,658 tons in 1966/67. In 1967/68, exports fell to 15,867 tons, but estimates for 1968/69 indicate a rise to over 20,000 tons. More than nine-tenths of the casein produced is exported, mainly to the United States and Japan.

A market survey of Southeast Asia by the Australian Dairy Produce Board in the early 1960's showed a large potential demand for sweetened condensed milk. New milk plants were subsequently built at Singapore and Bangkok, financed partly by the Australian dairy industry stabilization fund and partly by local interests. Each of these plants has an annual production capacity of 1 million cases (48 14-ounce cans per case) of sweetened condensed milk. A third plant in Manila is producing and marketing unsweetened, evaporated filled milk and sweetened condensed milk. These plants are processing milk products valued at over \$21 million a year in Southeast Asian markets. The value of Australian exports of raw materials to the plants for 2½ years of operation exceeded \$11.2 million. In November 1967, Australia announced that \$1.3 million would be invested in a joint-venture condensed milk plant in Indonesia to be in operation

by early 1969. This plant will have an annual capacity of 1 million cases of sweetened condensed milk, and will use 4,572 tons of skim milk powder and 1,626 tons of butter oil from Australia each year.

A project is planned by the Australian Produce Board, the Cambodian Government, and a local company to build a plant in Cambodia to manufacture recombined sweetened condensed milk. The Australian Dairy Stabilization Fund will contribute \$616,000 to the project. Initial production is expected to be 300,000 cases annually, with an eventual capacity of 600,000 cases a year.

The Australian personnel who have helped set up these joint operations in Asia are being replaced by local people trained in Australia. Long-term agreements with the Asian affiliates assure use of Australian raw materials at prevailing world prices. These indigenous companies have the advantage of familiarity with local product preferences and marketing methods, in addition to being eligible for Government assistance. Advantages to the country where these plants are located include expanded local employment opportunities and introduction of technical knowledge.

Grains.--Wheat, the most important grain export of Australia, contributed about 19 percent of the value of exports of rural origin in 1966/67. Exports (including grain equivalent of white flour) in 1963/64 reached a high of 7.8 million tons. But in 1967/68, wheat exports were just under 7 million tons, and in 1968/69 they are expected to be even lower at somewhat over 6 million.

Mainland China has recently been taking about 40 percent annually of Australia's wheat exports. Next important buyers are the United Kingdom, Japan, and India, although much of that shipped to India is a donation (table 14). In 1966/67 Pakistan imported an exceptionally large volume of Australian wheat; however, reduced sales of wheat to Mainland China and Pakistan account for most of the decline of wheat exports in 1967/68.

Australian exports of wheat flour amounted to almost \$26 million in 1966/67. Over 61 percent of all wheat flour exports go to Far Eastern countries, the most important being Ceylon, Indonesia, India, and Papua and New Guinea.

A new development in overseas wheat marketing is the charter of bulk wheat carriers with self-unloading equipment, such as elevators, transverse conveyors, and chutes. These ships may be used where unloading facilities are inadequate, as at some Asian ports. Other innovations for the transportation of Australian grain products have been the first containerized shipment of rice to Britain and the first bulk shipment of malt to Japan. Both were reported to result in lower costs and apparently successful shipments.

Australia supplies about 25 percent of world oat exports, and about 10 percent of world barley exports. Exports of both oats and barley in 1967/68 showed a sharp drop as a result of a poor season. Exports of oats fell to an estimated 181,000 tons, but estimates for 1968/69 indicate that exports will increase to 308,000 tons. West Germany is the principal market for oats, followed by Italy and the United Kingdom. Barley exports reached 424,000 tons in 1966/67, dropping sharply to 129,000 tons in 1967/68; forecasts for 1968/69

Table 14.--Wheat: Australian exports to selected countries, 1961/62-1966/67 1/

Destination	: 1961/62 :	: 1962/63 :	: 1963/64 :	: 1964/65 :	: 1965/66 :	: 1966/67 :
	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
			<u>- 1,000 tons -</u>			
China, Mainland.....:	1,953	2,075	2,543	2,276	2,018	2,164
Hong Kong.....:	84	68	56	59	78	99
India.....:	576	194	206	477	181	400
Japan.....:	427	345	512	443	364	432
Malaysia.....:	14	15	4	<u>2</u> / 10	<u>2</u> / 102	252
New Zealand.....:	170	166	182	166	149	105
North Korea.....:	-	46	44	45	102	108
Pakistan.....:	1	152	56	59	43	704
Singapore.....:	-	1	43	<u>3</u> /	<u>3</u> / 122	201
Thailand.....:	-	-	9	12	14	35
United Kingdom.....:	634	444	766	521	634	387
USSR.....:	-	1	1,331	862	575	-
World total.....:	5,529	4,136	6,905	5,715	5,157	6,506

1/ Grain equivalent of white flour not included.

2/ Includes Singapore from July 1, 1964, to Sept. 30, 1965.

3/ Included with Malaysia from July 1, 1964, to Sept. 30, 1965.

Source: Overseas Trade, 1961/67-1966/67, Commonwealth Bureau of Census and Statistics, Canberra.

indicate a record high of 386,000 tons. Australia's main markets for barley are Italy, Japan, West Germany, and the United Kingdom.

About two-thirds of Australia's total rice production is exported. In 1967/68, more than 99,000 tons of milled rice were exported, a 55-percent increase over 1965/66. Exports for 1968/69 are estimated to be even higher at about 107,000 tons. Rice is shipped primarily to nearby Pacific islands (Papua and New Guinea, New Zealand, and others) and also to Okinawa, Hong Kong, Singapore, and the United Kingdom.

Sugar.--Volume of sugar exports for 1967/68 was nearly 27 percent above the average of the previous 5 years, although value of exports showed only a small increase as a result of low world sugar prices. Sugar contributed almost 5 percent of the value of exports of rural origin. It is estimated that exports for 1968/69 will be a record high of over 2 million tons. The main importers of Australian sugar are the United Kingdom and Japan, followed by the United States, Canada, and Malaysia. Australia's share of the international sugar market has been increasing in recent years.

Fruits.--Approximately 80 percent of the dried vine fruit produced in Australia is exported. Shipments in 1967/68, amounting to about 69,000 tons valued at over \$23 million, showed almost a 17-percent drop from the 1965/66 high of over 82,000 tons. However, estimates for 1968/69, while not up to the 1965/66 record, show a recovery to 75,000 tons. The United Kingdom and Canada are the main importers; in the Far East, Japan is the most important market.

Exports of canned fruit (mostly peaches and pears) from Australia have increased steadily. In 1967/68, more than 90,000 tons of peaches and over 49,000 tons of pears were shipped abroad. Estimated exports of both canned peaches and pears are lower for 1968/69, however. The United Kingdom is the main market.

Apple exports, while showing yearly fluctuations, have increased over the years. After reaching an alltime high of over 159,000 tons in 1965/66, shipments declined, dropping to 126,000 tons in 1967/68. A slight increase is estimated for 1968/69. The main markets for apples are the United Kingdom, West Germany, and Sweden.

Cotton.--Cotton production is expanding faster than local consumption, and Australia is expected to have an exportable surplus for the first time in 1969. Cotton imports are duty free provided all domestic production has been taken by the mills. Imports for 1966/67 (only 9,000 tons) were nearly 40 percent lower than in 1965/66, continuing the rapid decline of recent years. The U.S. share of Australian raw cotton imports had declined to 38 percent in 1966/67, compared with over 65 percent 2 years earlier. In volume, Australian imports from the United States declined from 16,012 tons in 1964/65 to 3,357 tons in 1966/67. Total Australian imports for 1967/68 are expected to fall to only about 3,250 tons of speciality cotton required for blending.

Tobacco.--Imports of unmanufactured tobacco have declined as the percentage of domestic leaf Australian manufacturers must use has increased. Between 1954/55 and 1958/59, imports reached an annual average of 19,200 tons; by 1966/67, they were down to 12,237 tons. The United States was the most important source of these imports. Although purchases of U.S. tobacco declined from an annual average of 13,698 tons during 1954/55-1958/59 to 3,846 tons in 1966/67, the U.S. share of the total increased, reflecting the absence of Rhodesian leaf imports as a result of United Nations sanctions against trade with that country.

Eggs and poultry.--Volume of eggs exported is rising rapidly. Exports of eggs (liquid, frozen, pulp, and dried) amounted to 27 million dozen in 1967/68; in addition, about 5.8 million dozen were exported in shell. Estimates for 1968/69 are 38 million dozen eggs (liquid, frozen, pulp, or dried) and 7 million dozen in shell. Kuwait is by far the largest market for eggs in shell, taking 1.8 million dozen in 1966/67, followed by the South Arabian Federation. The United Kingdom is the largest market for eggs in all other forms, with imports of 4,563 tons in 1966/67, followed by the rapidly expanding Japanese market with 3,069 tons.

In 1966/67, 643 tons of poultry meat were exported. Exports are expected to expand steadily if sufficient overseas outlets can be found. Largest shipments are to Papua and New Guinea, followed by Fiji.

Agricultural Trade Directions

Australia ranks about eleventh among the world's trading nations in total trade, and second after the United States in agricultural trade. The directions of Australia's agricultural trade have been shifting (table 15). While trade with Western Europe has been curtailed by the EEC and the closing of the Suez Canal, Asia's growing population and rising level of income are providing an expanding market for farm products. In recent years Western European imports of wheat and meats have tended to decline. Although Britain is still the major market for Australia's dairy products and fruit, if Britain joins the EEC, this market will contract further. Wheat and meat are growing in importance in the diets of countries such as Japan, Taiwan, and the Philippines, where rice has traditionally been the main food. As these countries develop higher standards of living, diets improve and become more diversified. Sales of wheat under P.L. 480 programs have also hastened the acceptance of wheat as a food in countries like India and Pakistan, where rice is more costly than wheat.

During the past 10 years Europe's share of Australia's total exports has declined from 60 percent to only 33 percent, while Asia's share (22 countries) has increased from 26 percent to almost 40 percent. The share of exports going to the United Kingdom fell from about 55 percent in 1937/38 to 13 percent in 1966/67; during the same period, Japan's share of total Australian exports increased from about 4 percent to 19.4 percent, making Japan Australia's major export market for the first time. In 1967/68, Japan's share of these exports rose to over 21 percent.

Japan.--Total Australian exports to Japan have risen from \$388 million in 1962/63 to \$720 million in 1967/68. Australian agricultural exports to Japan in 1966/67 amounted to about \$431 million. Australia's most important exports to Japan in terms of value are wool and wheat. Since 1960, Japan has replaced Britain as the largest buyer of Australian wool, taking one-third of total exports. Australia supplies over 70 percent of Japan's wool imports and about 10 percent of wheat imports. In 1966/67, the value of Australia's wool exports to Japan was \$310 million; wheat exports to Japan amounted to \$26.7 million. Aside from wool and wheat, Japan in 1966/67 was Australia's best market for cheese, dried milk, casein, barley, sugar, and cattle hides. Other important exports to Japan were meats, inedible tallow, raisins, and for the first time, cottonseeds and grain sorghum. With cotton production on the increase, Australia will probably look toward Japan as a future market for raw cotton. Australian dairy products exported to Japan in 1966/67 were valued at almost \$17 million, and sugar exports at over \$23 million. Australia is Japan's major source of sugar and meat. Exports of beef and veal and mutton and lamb to Japan amounted to over \$33 million in 1966/67.

As a result of a growing livestock industry in Japan, the demand for feed grains has shown a rapid increase in recent years, and imports of feed grains

Table 15.--Australian exports to principal countries as a percentage of total exports, average 1956/57-1960/61 and 1961/62-1965/66, annual 1966/67

Country	Period		
	Average	Average	
	1956/57- 1960/61	1961/62- 1965/66	1966/67
	-Percent-		
Belgium-Luxembourg.....	2.9	2.1	1.8
China, Mainland.....	1.8	5.4	4.3
France.....	7.0	6.7	3.4
Germany, West.....	3.8	3.4	2.5
Hong Kong.....	1.6	2.0	2.1
India.....	1.7	1.7	1.9
Indonesia.....	0.5	0.3	0.2
Italy.....	4.9	4.0	4.2
Japan.....	14.0	17.0	19.4
Korea, South.....	0.3	0.3	0.3
Malaysia <u>1</u> /.....	1.3	1.3	2.0
New Zealand.....	6.0	6.0	5.9
Pakistan.....	0.5	0.4	1.8
Philippines.....	0.5	0.7	1.1
Singapore <u>2</u> /.....	1.3	1.4	1.9
Spain.....	0.2	0.6	0.5
Taiwan.....	0.1	0.3	0.6
Thailand.....	0.2	0.4	0.8
United Kingdom.....	27.2	18.6	13.4
U.S.A.....	7.1	11.0	11.9
USSR.....	0.5	1.2	0.7
Other.....	16.6	15.2	19.3
Total.....	100.0	100.0	100.0

1/ Includes Singapore from July 1, 1964-Sept. 30, 1965.

2/ Included with Malaysia from July 1, 1964-Sept. 30, 1965.

Source: Overseas Trade (various issues), Commonwealth Bureau of Census and Statistics, Canberra.

are expected to rise sharply. Japan's importers have been seeking to diversify their sources and have shown an interest in buying from Australia. In 1966/67, Japan replaced the United Kingdom for the first time and became Australia's major market for grain sorghum, taking over 27,000 tons. Grain sorghum exports are expected to increase rapidly as Australia expands production and directs more attention to the Japanese market.

India.--Total Australian exports to India in 1967/68 amounted to \$73 million. Main agricultural exports include wheat, wool, wheat flour, and nonfat dry milk. Almost \$48 million in agricultural items went to India in 1966/67, when wheat shipments jumped to 400,632 tons (an increase of 219,634 tons over the previous year), and wool exports almost tripled, increasing from 4,192 tons to 13,419 tons. India has an active leather industry and Australia has long been a supplier of hides and skins. Because of India's tight foreign exchange situation, the import licensing system is very strict. In many cases Australian exporters have found that some form of joint-venture processing operation in India is an effective way of bypassing import licensing regulations.

Malaysia.--Australian agricultural exports to Malaysia in 1966/67 totaled almost \$40 million. Australia supplies most of the wheat and raw sugar for Malaysia's flour mills and sugar refineries. Wheat exports to Malaysia in 1966/67 were valued at \$15.6 million, almost a quarter of the value of total exports to Malaysia. Australia also furnishes large quantities of dairy products, meats, fresh fruits, and a large range of processed foods. Although total Australian exports to Malaysia have almost doubled since 1962/63, in 1967/68 at \$64 million, they showed a decrease of over \$5 million from the previous year.

Singapore.--Total Australian exports to Singapore in 1967/68 amounted to \$65 million. In the Singapore market, Australia is meeting increasing competition. While Singapore's imports from Australia in 1967 showed a 4.2-percent rise over the previous year, all imports rose by 8.1 percent; imports were up 40.4 percent from Mainland China, 18 percent from Japan, 16 percent from the United States, and 44 percent from Kuwait.

Since the recent establishment of flour mills in Singapore, wheat has replaced flour as the chief import from Australia. In 1966/67, Australia supplied wheat valued at over \$12.5 million, or 83 percent of Singapore's total wheat imports. Australia supplies the bulk of Singapore's meats and dairy products, as well as all the live sheep for local slaughter. Australia also supplies fresh fruit and vegetables, but has considerable competition from Mainland China in this market. Australia hopes to increase exports to Singapore of canned meats and fruits.

Pakistan.--Agricultural imports into Pakistan were at a high level in 1966/67 as droughts and an increasing urban population contributed to a growing demand for wheat, corn, and rice. Australian exports of wheat to Pakistan in 1966/67 suddenly jumped to 703,880 tons from only 42,713 tons in 1965/66. Other Australian agricultural exports to Pakistan are wool and dried milk.

Mainland China.--In 1967/68, China was Australia's fifth best market (second best Asian market), with purchases exceeding \$141 million. Wheat accounts for 95 percent of total Australian exports to China. Of agricultural exports, wool is second in importance after wheat. China has recently been

taking about 40 percent annually of Australian wheat exports; this share amounted to over 2 million tons in 1966/67 and was contracted to be somewhat higher for 1967/68. Sales of wool to China in 1965/66 showed a decided drop from the past few years to only 2,600 tons. In 1966/67, although wool exports increased to 5,630 tons, they were far below the 1961-65 average of 39,000 tons. Unlike some previous years, Australia exported no barley, oats, or tallow to China in 1966/67. Leather and skin exports to China declined, but shipments of live pedigreed sheep increased considerably.

Hong Kong.--The volume of trade between Australia and Hong Kong has been steadily growing, although it varies considerably from year to year. Total exports to Hong Kong in 1967/68, valued at \$67 million, were down almost \$5 million from the previous year; but when compared with \$45.3 million for 1962/63, they showed almost a 50-percent increase. During the period 1963/64 to 1966/67, the value of meat and meat preparations exported by Australia to Hong Kong decreased from \$1.3 million to \$1.0 million, dairy products and eggs increased from \$1.9 million to \$2.6 million, and grains and cereals increased from \$4.9 million to \$8.0 million. Australia's main agricultural exports to Hong Kong are wheat (for the flour milling industry), dairy products, and fruit. Fruit exported to Hong Kong in 1966/67 amounted to \$875,000. Hong Kong also obtains a large amount of Australian wool, particularly wooltops, imported either directly or through Japan.

Taiwan.--Taiwan's import policy is becoming increasingly liberal and its total imports from Australia have increased from \$8 million in 1963/64 to more than \$22 million in 1967/68; over half of these imports were agricultural products. Main agricultural exports to Taiwan from Australia are wool, wheat, and dairy products. Australian exports to Taiwan are expected to continue to increase in value and to become more diversified. The Australian cotton industry is considering Taiwan as a future market.

Ceylon.--Australia's main export to Ceylon is wheat flour, followed by dairy products such as powdered milk, malted milk, and butter. Exports of wheat flour to Ceylon in 1966/67 amounted to 132,000 tons valued at almost \$10 million, down from nearly \$13.4 million 2 years previously. As the result of a bilateral trade arrangement, Ceylon has been Australia's largest market for wheat flour for many years. In 1966/67, Ceylon took 37 percent of Australia's total exports of this product. However, this market may be affected by the completion in 1968 of a Russian-built flour mill in Ceylon. This mill will have the capacity to process 70,000 tons of wheat annually to produce about 50,000 tons of flour.

Thailand.--Australia's exports to Thailand have almost quadrupled in 5 years, reaching \$27 million in 1967/68. Nearly half of these exports were agricultural--dairy products, wheat and wheat flour, meats, and inedible tallow. Thailand is also a growing market for processed foods and canned goods, farm implements, livestock, seeds, chemical fertilizers, and insecticides.

Philippines.--Trade between Australia and the Philippines has been growing during the past few years. Total Australian exports to the Philippines in 1967/68 amounted to \$47 million. In 1966/67 exports included over \$12 million in agricultural items, chiefly dairy products, malt, meats, animal oils, and animal feeds. Australians have been helping to develop the dairy and livestock industries in the Philippines, and a limited amount of Australian capital and technical assistance has been invested in the manufacturing of dairy products.

South Korea.--In 1966/67, total Australian exports to South Korea were valued at \$9 million, showing a 67-percent increase over the previous year. Wool accounts for the major part of all exports to South Korea. In 1966/67, wool exports amounted to more than \$7 million. Dried milk ranks second among agricultural products. There are also prospects of increasing sales of cotton and a wide range of Australian processed foods.

Indonesia.--Only about 3 percent of Indonesia's total imports come from Australia. However, total Australian exports to Indonesia in 1967/68, at \$16 million, nearly doubled those of the previous year. Australian agricultural exports to Indonesia in 1966/67 were valued at \$2.7 million, and consisted principally of wheat flour, dairy products, canned meat, and hides.

South Vietnam.--Total Australian exports to South Vietnam amounted to about \$26 million in 1967/68, showing about a 50-percent increase over the previous year. Main agricultural exports are dairy products and malt, followed by tobacco and meats. Australia has given about \$15 million in economic assistance to South Vietnam through the Colombo Plan and SEATO.

United States.--Australian trade with the United States has been steadily increasing for the past decade. Over the years, the balance of trade has been with the United States.

The value of total trade between the U.S. and Australia in 1966/67 was over \$1.3 billion--\$875 million in Australian imports from the U.S. (a sharp increase over previous year) and \$453.6 million in Australian exports to the United States. The United States was the principal supplier to the Australian import market in 1966/67, the U.S. share having risen from 14 percent in 1958/59 to nearly 26 percent in 1966/67.

The composition of trade between the United States and Australia has been changing. U.S. imports from Australia are becoming increasingly agricultural. In the late 1950's, agricultural products comprised about half of the value of total U.S. imports from Australia; by 1966/67 this share had risen to 68 percent. On the other hand, U.S. exports to Australia are principally non-agricultural, and the agricultural share is declining. Ten years ago agricultural products accounted for about 15 percent of total U.S. exports to Australia; by 1966/67 this share had fallen to about 5 percent of the total. U.S. agricultural imports from Australia in 1966/67 amounted to \$269.7 million, and U.S. agricultural exports to Australia, \$35.2 million.

Australia's principal agricultural exports to the United States are meat, wool, and sugar. Since 1960, the United States has supplanted the United Kingdom as the main market for Australian beef and veal. This change was brought about by the removal of restrictions under the 15-year Australian agreement with the United Kingdom and by high prices in the United States.

Wool sales to the United States have been declining since 1955, except for 1962/63, but Australia is still the largest supplier of U.S. imported apparel wool.

Tobacco has long been the principal U.S. agricultural export to Australia. Soybean cake and cotton are next in importance, although cotton shipments have fallen off as Australia has increased production. The United States has also been the main supplier of vegetable oils to Australia. But in the past 4 years, Australia has greatly expanded oilseed crop production (particularly safflower and cottonseed) and 1966/67 will likely mark the last year that oils were imported in substantial quantities. Australia's need to import long-grain rice, now largely supplied by the United States, will be lessened if Australian growers convert to long- and semi-long-grain rice varieties.

PROSPECTS

Agricultural exports have been steadily increasing, as well as Australia's share of world trade in wool, sugar, and beef. Assuming normal growing conditions and the continuation of present Government policy, Australia's agricultural exports are expected to increase, especially wool, beef and veal, tallow, cattle hides, eggs, feed grains, and canned fruit. Australia's ability to produce increasing quantities of wheat for export is also substantial, but actual export growth may be limited by the relatively slow growth of overseas demand and continued strong competition from other exporting countries. Moderate export gains are expected for dried fruits, mutton, and lamb. Decreases are anticipated for butter exports, but exports of other dairy products are expected to rise.

Imports of farm products are expected to decline, although Australia will still need to import some types of cotton. If the unusually high guaranteed prices to producers of tobacco and the protectionist policy against imports stay in effect, imports of tobacco may continue to decrease.

In Australia there is increasing emphasis on trade with the Asian countries. Prospects are that Australia's agricultural exports to the Asian region not only will expand in volume, but that this region will take an increasing share of these exports. The Commonwealth Department of Trade and Industry and many private organizations are promoting trade with the countries of Southeast Asia. Australian exporters are seeking the improved long-term credit facilities necessary for trade with the developing countries, and many Australian firms are establishing locally-owned and joint-venture businesses in these countries. The Australian Government is also helping the Asian countries through economic aid programs and the Asian Development Bank. In addition, Australia has been helping the developing countries of Southeast Asia to raise their standards of living by improving and expanding their agricultural production.

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